

# CITY GOVERNMENT

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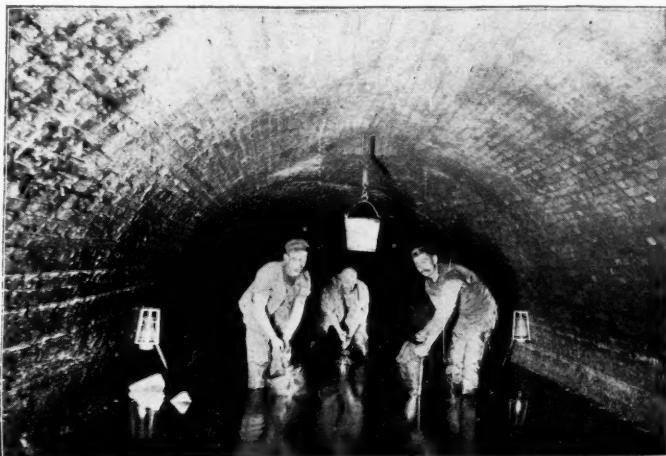
## CARE AND MAINTENANCE OF THE NEW YORK SEWERAGE SYSTEM.

By F. D. POTTER.

Probably no man in this country has ever had under his charge so great a length of sewers and variety of sewerage systems as has Commissioner James Kane, who stands at the head of the sewerage department of Greater New York. Mr. Kane was appointed to this responsible position by the present mayor at the beginning of this year. He is a Brooklyn man, and before his present appointment had held various positions of public trust, among them that of register of Brooklyn. The office of commissioner of sewers for Greater New York is one requiring, perhaps, a greater amount of executive ability than technical knowledge, and in this respect Mr. Kane is pre-eminently fitted for the control of his great department. In the technical department he has Mr. Horace Loomis, C.E., for his assistant, one of the most

in the solidly built up portions of the city, remain without sewers, and many of the buildings on them are drained by means unknown to the department. In what goes to make a properly and modernly sewered city, New York is many years behind the times. In his reports Mr. Loomis has many times recommended important additions and changes, among them being no less an innovation than the construction of a separate system for house drainage, disconnected entirely from the tide-water system; the sewage to be raised by pumping above high water at the point of discharge.

For an intelligent idea of the care of the sewers, it will perhaps be necessary to gain some general idea of the system itself. The question of sewage disposal for the borough of Manhattan is comparatively a simple one, owing to the city's favorable location between the East and the North rivers, and the elevation of the center of the island, which allows the water to flow off in all directions, while swift currents of salt water and the recur-



CLEANING BRICK OUTLET SEWER.



FORCE REMOVING DEPOSIT WITH BUCKETS.

prominent sanitary engineers of this country, who for twelve years has held the position of engineer in charge of sewers in what was formerly the city of New York, and to him we are indebted for much of the information contained in this article. To the 1,500 miles of sewers in Greater New York, including Manhattan, or old New York, the borough of Bronx, Brooklyn, Long Island City, and the many small cities and towns on Staten Island and over Long Island, among them Jamaica, Far Rockaway and Coney Island, with their various methods of sewage disposal and intricate systems, we can, of course, in this brief article, make little reference. What is said applies entirely to the system in New York city proper, or what is now the borough of Manhattan.

For years the department of sewers, like other departments in the great city which long ago outgrew what was planned for it by the early city fathers, has been handicapped by inadequate appropriations. One hundred and seventy-four miles of sewers have been laid in the past twenty-five years, and 1,889 receiving basins added, making the entire system 483 miles in length, with 5,743 receiving basins, but still great numbers of streets, even

ring tides effectually carry away the deposits. In regard to disposal, therefore, we meet only with the question of outlets, unvexed by that of sewage purification. The sewers as originally constructed led directly into the river at the bulkhead line and extended no farther. At times this created a nuisance. To abate this, a series of intercepting sewers was proposed and some of them constructed. These extended parallel with the water front, and picked up the ends of the laterals as they passed each street, and finally at some convenient point emptied into the river.

The discharge of such large volumes of sewage created at these points a still greater nuisance than originally existed. This forced an extension of these sewers to the ends of the piers, some 500 or 600 feet from the bulkhead line, where the water is deep and the current swift, the sewage being carried out through wooden barrel sewers. But though the disposal of the sewage is satisfactory by means of these extended and numerous outlets, yet it has been found by experience that the long intercepting sewers are not efficient in the rapid discharge of their contents. Being located between high and low water

mark, the forces which govern the flow of water in open channels and conduits having a free outlet, cease to operate when the outflow of the water is met by the inflow of the tide, which gradually diminishes the velocity of the current, and at the point of high water produces stagnation. It therefore is necessary to use hydrostatic pressure in order to prevent the long intercepting sewers becoming elongated cess pools. On account of this many new outlets are required. This would prevent back water flooding. Cases of overflow and backwater from sewers have occurred on several occasions of periods of heavy rain in conjunction with an unusually high tide, when at high water mark, the contents of the sewers will be set back many hundred feet into the sewers. This is due largely to the extremely flat grades of many of the streets as they approach the river front. This flat area is the result of the gradual filling in of the river front beyond the original high water mark; the present bulkhead on the North river side being from 700 to 1,200 feet west of the original shore line. The East river front is much the same, and as a result, all the large sewers discharge below high water.

While the construction of new outlets is constantly lessening the difficulties thus occasioned, it is still neces-

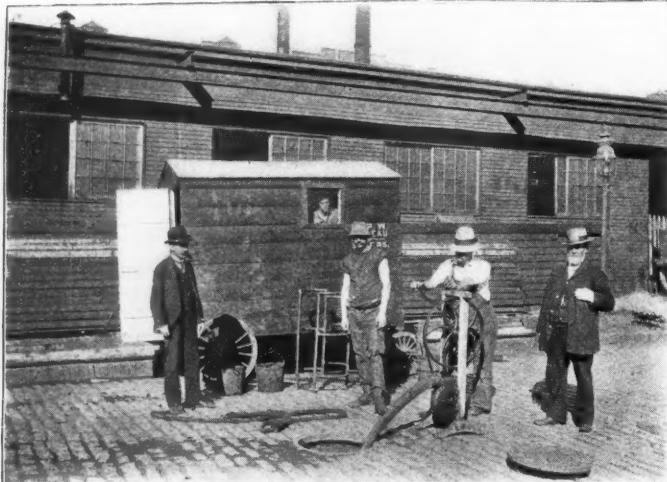
is fixed by law and not according to the kind of work demanded on each particular job. At times the cleaning is of a most disagreeable and often dangerous character.

The total number of basins cleaned during 1897, was 7,387, at a cost of \$4.50 each cleaning, or a total of \$33,241.50. Under contract agreement 251,094 feet of sewers were cleaned last year at a cost of \$33,579.99, averaging 13.4 cents per foot. In 1896 the cost per foot for the same work was 14.7 cents per foot. The saving of 1.3 cents per foot was due to a less amount of deposit in the sewers in 1897, owing to the thorough cleaning given the sewers in 1896.

Of the one hundred miles of pipe sewers (the rest of the system being brick sewers) 78,228 feet were cleaned by flushing, by the laboring force of the department at a cost of (\$0.10) ten cents per foot.

About 102 miles of brick sewers were examined by the inspecting force of the department, and of this about 50 miles were cleaned under contract. The total length cleaned by contract and day's work was, according to the last report of the engineer, about 62.4 miles, costing \$41,420.79, or 12½ cents per foot.

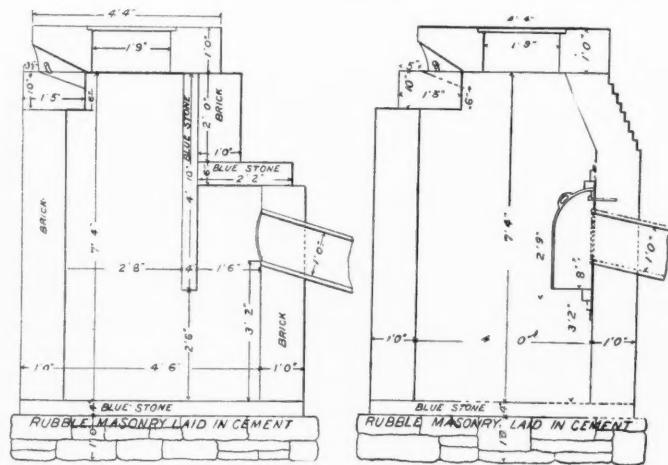
The foregoing shows that about 20 per cent. of the system was examined, and about one-half of this found to require cleaning. The engineer's report further states:



AIR PUMP TO SUPPLY AIR TO MAN IN SEWER.

sary by care to overcome the evil effects of the present condition. For this an appropriation of \$130,000 was granted by the city in 1896, and of \$125,000, increased by a transfer of \$6,000, making a total of \$131,000 in 1897. The decision in the present year by the comptroller, regarding the city's debt, will handicap the work during the present year and probably prevent many much needed improvements.

In the matter of cleaning the sewers, New York uses positively no new or improved patented or automatic devices. Compared with the great army of workmen and the endless devices used to clean the Paris sewers, which exceed those of Manhattan by only 104 miles in length, the cleaning of the New York sewers is primitive. Almost the entire work is performed by hand, with such tools as scrapers, calipers, ball rammers and spike, even the flushing being accomplished by means of hose. The force of laborers employed by the department is small, only 29 men, most of the cleaning being let by contract, at a considerable saving to the city. The sum saved per catch basin by this method is about \$2.14 a year, after taking the cost for a series of years. This is due, no doubt, to the fact, that a contractor is able to gauge the wages paid for day labor according to the character of the work to be done. He can therefore get more and better work from the men than can the city, where the scale of wages



OLD AND NEW RECEIVING BASINS.

"Had we the force to examine the whole system, and to put it in sanitary condition, we should probably find that 200 miles of sewers should be cleaned per annum, and that \$150,000 should be spent."

The table for the expenditure of the appropriation of 1897 is as follows:

Appropriation .....	\$125,000.00
Transfer .....	6,000.00
Payroll, laborers, etc.....	48,225.00
Materials .....	9,092.20
Work under orders .....	66,681.31
Repairs .....	5,580.00
Transportation .....	1,320.05
	\$130,998.65
Balance .....	1.55

There is nothing complicated in the methods of sewer cleaning in New York city, the department claiming that in times of emergency, the hand method is much quicker, effective, and more to be depended upon than any automatic device so far tried.

Although the New York sewers, unlike the sewers of Paris, are not a ready and easy receptacle for all sorts of street refuse, yet the variety of obstructions met with is most amazing, being anything from large planks, piles, barrels, paving stones, brick, lumber, etc., probably deposited when the sewers are open during construction

operations, to rags, hoopskirts, dirt and refuse of every sort.

The pipe system varies in size from 12 in. to 32 in. pipe. These are flushed by hand and hose to the nearest man-hole, where the debris is lifted out by means of buckets. Almost the only device used for cleaning these pipes is the scraper pushed folded into the pipe by means of rods about 3 ft. 6 in. long, threaded at the ends to allow the attachment of other rods. This scrapes the surface as it is withdrawn. Water pressure is obtained from the nearest hydrant by means of hose with fire nozzle.

When obstructions occur in the pipes a rod is first used to locate the stoppage. The caliper is then inserted. The caliper varies from 8 in. to 15 in. diameter, and is formed of four bent or curved prongs attached to a rod. Other rods are coupled on until the desired length is reached. This instrument does not clamp the object, but is simply used to turn and twist it from its position. Clamping devices have been tried, but failed on account of the small space for operation allowed by the pipes.

If the caliper fails to remove the obstruction the ball or rammer is inserted, and the endeavor is made to break the object. The device, is simply a solid iron ball attached to a rod in the same manner as the caliper.

A sharp pointed iron is sometimes inserted and moved back and forth after penetrating the obstruction. This will often break up the object where the other devices have failed.

If none of these instruments succeed in removing the obstruction the department resorts to no other method than to order the sewers taken up and the "object removed by surface excavation." The necessity for this extreme measure has not occurred more than a dozen times during the past year.

The brick sewers and main outlets are cleaned by men with short-handled shovels, who enter the sewer through the manholes. The buckets, filled with the deposit are passed from hand to hand and are drawn up through the manholes, where the dirt is dumped into carts.

A department foreman patrols each of the six districts into which the city is divided. His duty is to remove the cover of each catch basin, take the depth of deposit in the basin, and report on those needing immediate attention. This report is turned in to the general inspector who transfers it to the chief engineer, and the engineer fills out a requisition upon the contractor for cleaning. After the daily report of the contractor is received, the district foreman again makes an examination to see that the required cleaning has been satisfactorily performed.

For the examination of the sewers a gang of men, including a foreman and four laborers, with horse and cart, are constantly making the rounds of the city, starting at the first manhole of all outlet sewers and working inward along the main lines. These report upon the condition of the sewers, the length and location of all sewers requiring to be cleaned, depth of deposit, etc. The sewers are then turned over to the contractor for cleaning.

The appropriation being small, every effort of the department is bent toward keeping the outlets open and free of sediment. Often, in the process of cleaning or repairing a sewer, house or illuminating gas is encountered to such a degree as to overcome the men. At best the air is stifling and the air pump shown in the accompanying illustration, has been found of the greatest advantage, both for the comfort and safety of the men and for the expediting of the work.

The use of a removable hood, instead of the old-time immovable stone to trap the outlet pipe in the catch basin has greatly lessened the danger from gas, the removal of the hood allowing the gas underneath to dissipate.

Olephant or marsh gas is often liberated at the mouth of some sewer, by the tramping or digging of the men in the old sediment and decayed matter. This is extremely dangerous and often it is seen burning for some time upon the surface of the water.

Twelve years ago the records and maps of the sewers of the city were most incomplete. What has been done to remedy this evil is due largely to the efforts of Mr. Loomis.

Had proper and complete records of all pipes, sewers and other subsurface constructions been kept the great delay and extra expense on the Fifth avenue sewer last year need never have occurred. It was due without doubt largely to pipes and old constructions unexpectedly encountered, entailing delays, confusion, inconvenience and money loss. New York should serve as an impressive lesson on the penalty sure to be reaped from the neglect of this important branch of every city department, which might properly be called the "bookkeeping of engineering."

#### PAY FOR CITY GRANTS.

A writer in the *Chicago Inter-Ocean*, which is controlled by Mr. Yerkes, the street car magnate, advances an interesting argument in favor of requiring the street railways of that city to pay only 3 per cent. of their gross earnings to the city for the rights granted them. He writes:

"A large part of the error in the general discussion about street railway franchises in this city seems to be due to the variety of opinions held as to what constitutes a fair bargain between company and city. The only means of obtaining a standard of the matter is to institute a comparison with other cities in their treatment of their car lines or to take as an example an ordinarily long period lease of business property.

"A comparison with other cities shows a state of affairs existing at present in Chicago which is anything but an argument for putting greater burdens on the street railroad lines. The three principal companies in this city at present give a greater portion of their earnings to the public than the street railways in any other place in the United States. In Minneapolis and St. Paul the municipalities receive about 3 per cent. of the gross receipts of the car lines in lieu of all taxes and exactions. In New York city barely more than 6 per cent. is paid in by the car lines. Boston gets 4½ per cent. of the gross receipts, Buffalo 5½ per cent., Cleveland 3 per cent., Kansas City 2½ per cent., Indianapolis 3½ per cent., Milwaukee 2 per cent., Washington 4 per cent., and St. Louis 2 per cent. When it is remembered that in almost every one of these cities the street railways hold perpetual or 100-year franchises, it is seen that the Chicago lines which give annually to the public more than 10 per cent. of their gross receipts, are, by comparison, entitled to perpetual franchises under their existing contracts and obligations.

"But it is commonly stated by the opponents of street railroads in this city that the car lines do not pay 10 per cent. of their gross receipts to the city. Nothing is easier than to prove that they do. It is a mere question of figures to show what the car lines actually do devote to the public good, and these figures are within the reach of any one who cares to satisfy himself before he rushes to conclusions. From 1893 to 1896 the street railroad records show a higher amount than 10 per cent. of their gross receipts given to the city, since during that period practically all the tracks in the city were relaid on account of the change to electric traction, and the amounts

paid for new paving were enormous. These sums for providing good streets were sufficiently large to bring up the share of the gross receipts expended for the public in some years as high as 15 per cent. Even 1896 reports show better than 10 per cent. given to the general good. On account of diminished cost of paving work, 1897 proved to be the smallest year since the World's Fair for public contributions by the street car lines. In this year the West Chicago Street Railroad Company gave a smaller per cent. than any of the other big lines. Selecting, therefore, the least striking argument possible, the 1897 figures for the West Chicago company, in round numbers, are herewith shown:

Gross receipts for 1897.....	\$3,850,000
Paving and repairs of paving.....	135,000
Cleaning and sprinkling right of way.....	65,000
Repairs of bridges and tunnels and general conditions imposed by city regarding right of way .....	20,000
Taxes and car licenses.....	120,000
Special cash burdens imposed by clauses of ordinances .....	35,000
Carrying city officials, policemen, etc., free..	10,000
All other exactions.....	5,000

Total, 10.1 per cent. gross receipts..... \$390,000

"It will be seen from the foregoing figures that even in an off year the street car companies of the city devote directly a tenth of their entire earnings to the public good. Indirectly, their entire operating expenses go for the same purpose, since they furnish the people with the transportation which is so indispensable in city life. So a comparison with the conditions existing in other cities, where from 2 to 7 per cent. is given to the municipalities in full of all exactions, lends but little strength to arguments directed toward making the car lines here pay increased amounts for future extensions of franchises."

#### SMOKE PROTECTORS TESTED.

George A. St. John, chief of the fire department at Wilkesbarre, Pa., recently gave a practical test of several of the best known smoke protectors. He erected a building thirteen feet square and nine feet high for the purpose. A fire was built in the center of the building and covered with wet sawdust, fires were also built in four tinkers' pots of charcoal and covered with sawdust, old burlap bags were set on fire and red fire was used, and altogether this made a very dense smoke. B. H. Carpenter was the official timekeeper. Charles Myers put on a Bader and went into the building and stayed nine minutes and forty-five seconds. Anthony Blaum put on a Miller and stayed two minutes and thirty-five seconds. The Midget was tested by Harry Gruver, who stayed twenty-four minutes in the building. The Bader was then put on by Philip McManus and the Loeb by Charles Myers, both going in at the same time and coming out in twenty minutes.

#### WATER WORKS MEN TO MEET.

The eighteenth annual convention of the American Water Works Association, to be held at Buffalo, N. Y., June 14, 15 and 16, promises to be the largest meeting in the history of the organization. Water works men, representing both municipal and private plants, will be there by the hundreds, and there will also be a large representation of the business houses engaged in supplying construction and maintenance material to water departments. It is probable that headquarters will be at the Iroquois Hotel, although this is not thoroughly understood at this writing. The programme for the convention has not been definitely arranged, but among those who have promised to prepare and read papers are:

F. W. Cappelen, city engineer, Minneapolis, Minn.

S. E. Babcock, chief engineer water works, Little Falls, N. Y.

John L. Bishop, superintendent water company, Salina, Kan.

L. N. Case, general superintendent water works, Detroit, Mich.

F. A. W. Davis, vice-president water company, Indianapolis, Ind.

Dow R. Guinn, superintendent water company, Quincy, Ill.

William Himrod, secretary water department, Erie, Pa.

Charles Hermann, chief engineer water department, Louisville, Ky.

Wm. R. Hill, chief engineer water department, Syracuse, N. Y.

John B. Heim, superintendent water department, Madison, Wis.



JOHN CAULFIELD, OF ST. PAUL,  
Prest. American Water Works Ass'n.

Wm. H. Laing, superintendent water company, Racine, Wis.

Wm. P. Mason, professor of chemistry, Rensselaer Polytechnic Institute, Troy, N. Y.

Dabney H. Maury, Jr., superintendent water company, Peoria, Ill.

D. W. Mead, engineer, Rockford, Ill.

Owen T. Smith, superintendent water company, Freeport, Ill.

M. R. Sherrard, engineer water department, Newark, N. J.

Wm. F. Wilcox, superintendent water company, Jackson, Miss.

P. D. Wanner, president water department, Reading, Pa.

T. W. Yardley, of R. W. Hunt & Co., Chicago, Ill.

The subjects of the papers to be prepared by the above named gentlemen have not been announced, but the principal topics to be treated are legal decisions, filtration, pumping machinery, electrolysis and meter systems.

The local committee at Buffalo have made elaborate preparations for entertaining the visitors.

## ASPHALT AND BRICK PAVEMENTS.

The League of American Municipalities through its bureau of information, has gathered very interesting and valuable data regarding asphalt and brick paving in the principal cities throughout the country. The authenticity of the league's information cannot be denied, for it has been furnished directly and vouched for by the city engineers of the various municipalities. A large number of important cities, including Bay City, Mich.; Burlington, Ia.; Birmingham, Ala.; Bloomington, Ill.; Charleston, S. C.; Duluth, Minn.; Fall River, Fitchburg and Somerville, Mass.; Little Rock, Ark.; Meriden, Conn., and Richmond, Va., are reported as having no asphalt pavements, although many of them contemplate the use of this material for street improvements soon to be made. The following table has been compiled from the information collected by the League, showing the cost of asphalt pavements on a six-inch concrete foundation:

Place.	Price per square yard.	Term of guaranty.	Proportion of amount held until expiration of guaranty.	Kind of asphalt used.	Kinds of asphalt admitted in bidding. [In 1897.]
Buffalo, N. Y.	\$2.53a	5 yrs.	Bond.....	Trin., Ky., Sicilian and Berm.....	Trin., Ky. and Ger. Rock, Sicilian & Berm.*
Binghamton, N. Y.	1.59	5 "	10 per cent.	Alcatraz.....	All Kinds.
Cincinnati, O.	2.35a	5 "	10 "	Trinidad and Bermudez...	Trinidad and Bermudez.*
Cleveland, O.	2.55	10 "	10 "	Trinidad.....	Trinidad.*
Columbus, O.	2.40b	5 "	10 "	Trinidad.....	Trinidad and Rock.
Camden, N. J.	1.77c	10 "	10 "	Trinidad and Alcatraz.....	Trin., Berm. and Alcatraz.
Chattanooga, Tenn.	2.85	5 "	Bond.....	Trinidad.....	Trinidad.
Detroit, Mich.	1.65	10 "	Bond.....	Alcatraz.....	Trin., Berm. and Alcatraz.
Erie, Pa.	1.99	10 "	Bond.....	Alcatraz.....	All Kinds.
Grand Rapids, Mich.	1.55	5 "	Bond.....	Assyrian.....	All Kinds.
Hartford, Conn.	2.59	5 "	Bond.....	Trinidad.....	Trinidad.
Houston, Tex.	1.90	5 "	Bond.....	Trinidad and California.....	All Kinds.
Joliet, Ill.	2.01	7 "	Bond.....	Bermudez.....	Trin. or as good.
Kansas City, Kas.	2.12½	5 "	Bond.....	Trinidad.....	Trinidad.
Los Angeles, Cal.	1.44	None	None.....	Alcatraz.....	California Asphalts.
Minneapolis, Minn.	2.00d	5 yrs.	10 per cent.	Trinidad.....	All Kinds.
New Orleans, La.	2.80	5 "	Bond.....	Trinidad.....	Trinidad.*
Philadelphia, Pa.	2.05	5 "	Bond.....	Trin., Berm. and Alcatraz.....	All Kinds.
Providence, R. I.	2.45	5 "	5 per cent.	Trinidad.....	Trinidad.
Salt Lake City, U.	2.79e	5 "	10 "	Utah.....	All Kinds.
St. Joseph, Mo.	2.80f	5 "	Bond.....	Trinidad.....	Trinidad.
Syracuse, N. Y.	1.40	5 "	15 per cent.	Trinidad.....	All Kinds.
Springfield, Mass.	3.07	10 "	Bond.....	Sicilian.....	Nat. Rock and Trinidad.
Seranton, Pa.	1.95	5 "	Bond.....	Trin. Land.....	All Kinds.
Utica, N. Y.	1.85	10 "	Bond.....	Trinidad and Alcatraz.....	All Kinds.

a—Average price, b—Bids of Mar. 29, 1898. c—Contracts let last year, but work delayed on account of litigation. d—Bid of Mar. 25, 1898. e—1896 price; no asphalt laid in 1897. f—Lowest price previous to 1897; none on 6-in. concrete laid that year. \*In these cities the specifications for 1898 admit Alcatraz.

The twenty-five cities represented in the above table were selected at random, the purpose being to present sufficient figures and facts in tabular form for the purpose of drawing comparisons conveniently. In each instance, except where otherwise noted, the lowest price paid for an asphalt pavement on a six-inch concrete foundation in 1897 is given, the kind of asphalt used in mentioned, the different kinds of asphalt admitted by the specifications are named, and the term of the guaranty required is stated.

Readers of this table may account in their own way for the variance of the prices, from \$1.40 in Syracuse to \$3.07 in Springfield. A careful study of the table shows that geographical considerations count for naught in the making of prices on asphalt paving. When it is seen that Detroit pays only \$1.65 on a ten-year guaranty, while Cleveland pays \$2.55 on the same guaranty and Buffalo pays \$2.53 on a five-year guaranty, one may see that the term of the guaranty does not always account for the variance of the prices. Probably the most significant fact shown in the table is that all of the ten cities where the prices are below \$2 do not confine the bidding

to the Trinidad and Bermudez asphalts. Here, for instance, is a significant division of the table:

Cities which do not confine bidding to Trinidad and Bermudez asphalts:	Cities which confine bidding to Trinidad alone, or to Trinidad and Bermudez asphalts:
\$1.40.....	Syracuse \$2.01.....
1.44.....	Los Angeles 2.12½.....
1.55.....	Grand Rapids 2.35.....
1.59.....	Binghamton 2.45.....
1.65.....	Detroit 2.55.....
1.77.....	Camden 2.59.....
1.85.....	Utica 2.80.....
1.90.....	Houston 2.80.....
1.95.....	Seranton 2.80.....
1.99.....	Erie 2.85.....

The following matter of general interest has been gleaned from the information gathered by the league:

Buffalo, N. Y.—Asphalt has been used for paving since 1878 with satisfactory results, the only fault found being the cost of maintenance. Trinidad Lake, German Rock, Kentucky Rock, Sicilian and Bermudez asphalts have been used, but this year the specifications admit Alcatraz and Trinidad land.

Binghamton, N. Y.—Asphalt pavements have been laid for eight years and all except one are wearing well.

Cincinnati, O.—Pavements of Bermudez and Trinidad Lake asphalt have been used for twelve years and no fault has been found.

Cleveland, O.—Asphalt paving has been confined to the Trinidad Lake material, has been used about ten years and proved very satisfactory.

Columbus, O.—The Trinidad Lake pavements have a general inclination to deteriorate after the fifth or sixth year unless constant repairs are made.

Detroit, Mich.—Trinidad and Bermudez asphalts have been used for nine years and City Engineer Ludden reports that the pavements roll up into waves after a few years. Alcatraz has been recently introduced. The chief faults found with asphalt pavements are that they are slippery in wet weather, dusty in dry weather and expensive to keep clean.

Erie, Penn.—Asphalt has been used for about fifteen years and the city engineer reports a general rolling of surface, attributed to a lack of rolling on sub-grade and an inferior concrete base.

Grand Rapids, Mich.—Asphalt used for eight years and has a tendency to rot along gutters and wear rapidly where traffic is heavy.

Kansas City, Kas.—Trinidad Lake asphalt pavements used for ten years without fault.

Minneapolis, Minn.—Asphalt pavements used for eight years. City Engineer Cappelen says the principal fault is cracking and, in his opinion, this cannot be prevented in that climate.

New Orleans, La.—Trinidad pavements used for fifteen years. First pavement was laid without a binder course and the dampness coming up through the concrete caused disintegration of the asphalt surface. This has since been remedied by the use of a binder course since which time asphalt pavements have given entire satisfaction.

Philadelphia, Pa.—The first asphalt pavements were laid in 1875, since which time 182 miles of streets have been paved with this material. There has been no fault found with the exception that, where a binder course was not laid, the wearing surface eventually slipped, causing the surface to become wavy and easily broken; all pavements, however, within the last few years have been laid with a binder course. The streets paved with rock asphalt are somewhat slippery, and the specifications require that the contractors shall sand them as often as the conditions of the weather make it necessary.

Providence, R. I.—Mixtures of asphalt and coal tar have been used since 1874, but have never given satisfaction.

St. Joseph, Mo.—Asphalt used since 1886 with perfect satisfaction.

Springfield, Mass.—Charles M. Slocum, city engineer, says: "Trinidad Lake asphalt laid in 1896 rather poor—surface undulating."

Scranton, Pa.—Asphalt pavements used for twelve years. City Engineer Phillips says: "We have some good and some bad asphalt pavements laid by the same companies."

Troy, N. Y.—Asphalt used for seven years. Some has shown cracks and needed repairs, which have been made at contractors' expense, as all pavements have been guaranteed for ten or fifteen years.

Atlanta, Ga.—Asphalt used for five years and has been very satisfactory.

Altoona, Pa.—Asphalt pavements were laid from 1889 to 1895, inclusive. Transverse cracks have shown in pavement laid in 1890; that laid in 1889 is apparently as good as ever.

Baltimore, Md.—The first sheet asphalt pavement was laid in 1885 and has been resurfaced twice since.

Harrisburg, Pa.—Asphalt used for eleven years; shows disintegration.

Harvey Linton, Altoona, Pa.—Brick pavements, on concrete, have been used here since 1890 and all are in good condition.

Frank S. C. Bardol, Buffalo, N. Y.—Brick used for paving since 1891 with good results. We have difficulty in fitting repairs to old work.

S. Dwight Eaton, Burlington, Ia.—Our brick pavements are built with four inches of sand, then a layer of brick laid flat, then a half-inch cushion of sand and the surface layer of brick laid edgewise, with sand for filling. This kind of pavement has been in use twelve years and is in good condition, having received scarcely any repairs.

W. P. Butler, Bloomington, Ill.—We use two course work, four inches of compact cinders, one inch of sand, bottom course of brick laid flat, another inch of sand and the top course of brick laid on edge. We have had such pavements for twenty years and the only fault is depression over sewer or other trenches caused by the pavement being laid too soon after excavations were filled in.

N. J. Stanley, Cincinnati, O.—Brick pavements, with concrete foundations, used for ten years; no faults.

#### BRICK PAVING STATISTICS.

Place.	Price per Sq. Yard.	Kind of brick used.	Foundation.	Cushion.	Filler.
Atlanta, Ga.	\$1.85		6-in. concrete.....	1	-in. sand Grout and Pitch
Altoona, Pa.	1.60	Clearfield shale.....	" "	1	" Grout
Baltimore, Md.	1.73	Williamsport, Pa. (D. P. Guise).....	" "	1	" Sand
Buffalo, N. Y.	2.25	Mack and others.....	" "	1	" Cement and sand
Burlington, Ia.	1.40	Burlington.....	4-in. sand and flat brick.....	½	" Sand
Bloomington, Ill.	1.20	Bloomington and Springfield.....	4-in. cinders and flat brick.....	1	" None
Binghamton, N. Y.	1.97	Syracuse.....	6-in. concrete.....	1	" Grout
Cincinnati, O.	1.67	Shale (9x1x3).....	" "	2	" Coal tar
Cleveland, O.	1.70	Shale (8½x5x3½).....	" "	1	" Cement
Columbus, O.	.89	Shale (9x3x3).....	Broken stone and sand.....	1	" Pitch
Camden, N. J.	2.26	Eastern Pennsylvania.....	6-in. concrete.....	½	" Grout
Council Bluffs, Ia.	1.38	Vitrified.....	4-in. sand and flat brick.....	2	" Sand
Chattanooga, Tenn.	2.30	Tennessee vitrified.....	6-in. concrete.....	1	" Coal tar
Detroit, Mich.	1.60	Nelsonville and others.....	" "	1	" Cement
Dubuque, Ia.	1.35	Purington.....	" "	1	" Sand
Erie, Pa.	1.69	Park No. 1 vitrified.....	" "	2	" Cement and sand
Ft. Wayne, Ind.	1.50	Canton (9x3x4).....	" "	1½	" Cement and sand
Grand Rapids, Mich.	1.50	Canton and others.....	" "	1	" Coal tar
Holyoke, Mass.	2.02	Catskill shale.....	4-in. concrete.....	2	" Grout
Houston, Tex.	1.85	Garrison, Tex., vitrified.....	6-in. concrete.....	1	" Sand
Joliet, Ill.	1.05	Hallwood and Galesburg.....	" "	1	" Sand
Jackson, Mich.	1.24	Canton and Wassall.....	" "	1	" Grout
Kansas City, Kas.	1.08	Diamond vitrified.....	Sand and flat brick.....	2	" Cement
Los Angeles, Cal.	2.70	Los Angeles vitrified.....	" "	2	" Sand
Little Rock, Ark.	2.25	Ft. Smith vitrified.....	6-in. concrete.....	1	" Sand
Minneapolis, Minn.	1.67	Purington.....	" "	1	" Grout
Meriden, Conn.	2.27	Mack.....	" "	1	" Grout
New Orleans, La.	2.10	Portsmouth, O.....	" "	1½	" Grout
Philadelphia, Pa.	1.43	Vitrified.....	" "	1	" Grout
Providence, R. I.	2.10	Barrington, R. I., vitrified.....	" "	1	" Cement
Syracuse, N. Y.	1.78	Syracuse.....	" "	1	" Grout
St. Joseph, Mo.	1.50	St. Joseph vitrified.....	" "	1½	" Sand
Seranton, Pa.	1.60	Seranton shale.....	" "	2	" Tar and cement
Springfield, Mass.	2.16	Syracuse.....	" "	1	" Grout
Saginaw, Mich.	1.17	Saginaw and Hallwood.....	" "	1	" Grout
Toledo, O.	1.22	Nelsonville and others.....	" "	1	" Grout
Trenton, N. J.	1.57	Trenton vitrified.....	" "	1	" Cement and sand
Troy, N. Y.	1.60	Mack, Catskill and Canton.....	" "	1	" Cement and sand
Topeka, Kas.	1.17	Topeka vitrified.....	Sand and flat brick.....	1	" Sand
Youngstown, O.	1.53	Brady's Run.....	6-in. concrete.....	1	" Cement and sand

a—Bid of March 29, 1898, exclusive of grading.

Trenton, N. J.—A small quantity of sheet asphalt was laid last fall on old asphalt blocks as a foundation. It has not been laid long enough to form any opinion as to its merits.

Youngstown, O.—Market street and Central square were paved with asphalt in 1882, are in fair condition and have cost about three cents per square yard per year for repairs since the five-year guaranty expired.

#### BRICK PAVEMENTS.

The table on this page shows the lowest prices paid for brick paving in forty cities, also the construction of the pavements.

City engineers write:

R. M. Clayton, Atlanta, Ga.—Vitrified brick pavements, with six-inch concrete foundations, have been used here for four years with satisfactory results. The only trouble is the difficulty of fitting brick to T rails.

M. E. Rawson, Cleveland, O.—Brick pavements used for ten years. The first pavements were laid of fire clay brick, which were rather soft and wore rapidly, but uniformly; the next were too brittle and chipped. At present the brick contain the necessary hardness and toughness, due to the fact that the proper proportions of shale and fire clay have been determined and better methods of burning and cooling are in operation.

Julian Griggs, Columbus, O.—Brick used for paving since 1887. As a whole, it has proven to be the best material used here for paving streets, price considered.

L. E. Farnham, Camden, N. J.—A brick pavement on six inches of concrete was laid here in 1894. The brick should have been repressed; they chip on corners and edges. Specifications for brick paving should allow the engineer the decision on the quality of the brick used.

Thomas Tostevin, Council Bluffs, Ia.—With good brick and well rolled sub-base, brick is an excellent pavement. Pavements here nine years old have not required

repairs. We use two-course work, with four inches of sand at the bottom and two inches between the courses.

Robert Hooke, Chattanooga, Tenn.—We have used brick pavements for seven years and the only objection is that they do not give a secure foothold to horses on grades of from 7 to 9 per cent.

H. D. Ludden, Detroit, Mich.—The only fault of consequence we find with brick pavements is the noise. Brick used here for seven years.

E. C. Blake, Dubuque, Ia.—Have used brick pavements for six years with little fault found.

B. E. Briggs, Erie, Pa.—Brick pavements used for five years. In some places surface is uneven, caused by lack of consolidation of sub-grade and inferior concrete. Pavements laid with round-edged brick are very noisy.

L. A. Gweninger, Houston, Tex.—Brick makes a perfect pavement for this climate. We have used it eight years.

R. M. Newman, Jackson, Mich.—This city has had brick pavements for seven years. Our first pavements were laid with an under course of flat brick and settled a little in places. The brick are but slightly worn. Our last pavements, with six-inch concrete foundations, have not been down two years yet. They show no defects except along the rails of street car tracks.

T. Hartman, Little Rock, Ark.—I am a strong advocate of brick paving, but insist upon the best grade of vitrified brick.

A. C. Bell, New Orleans, La.—My objections to brick pavements are that unless very carefully laid to a true surface, they spawl easily; they are noisy, difficult to keep clean, and therefore unsanitary, and can never be properly patched when street has been opened for pipe laying, etc.

Thomas M. Thompson, Philadelphia, Pa.—The first vitrified brick pavements were laid in this city in 1887. The first pavements did not wear very well, as the industry was then in its infancy and manufacturers had not yet learned the art of thoroughly vitrifying a brick for street paving purposes; they were also laid on a sand or gravel foundation. The fault at that time was principally the disintegration of the brick, owing to its porosity and susceptibility to frost. This difficulty has been overcome to a great extent, and we consider a vitrified brick pavement, laid upon a cement concrete foundation, a good, clean, noiseless, durable pavement for residential streets, or streets not subjected to heavy traffic. Since 1887 we have paved about 98 miles of streets with vitrified brick.

Charles W. Campbell, St. Joseph, Mo.—Most of our brick pavements have failed because laid without proper foundation. All of our brick streets, except two, are laid in two courses, with sand base.

Joseph P. Phillips, Scranton, Pa.—Our oldest brick pavement was laid five years ago. I like it, but some drivers claim that it is more slippery than asphalt.

Charles M. Slocum, Springfield, Mass.—Vitrified brick pavements first laid here in 1892. No defect as yet.

W. F. Brown, Toledo, O.—The first brick pavement here was laid in 1888. Faults are chiefly from lack of uniformity in burning brick. There are settlements from unstable sub-soil and excavations for sewer and water connections.

C. C. Haven, Trenton, N. J.—We have had brick pavements on concrete for six years. The only fault found with them are that they are somewhat noisy. A few cracks have formed by expansion from heat, but nothing very serious.

M. Schenck, Troy, N. Y.—We have used brick pavements for six years and they have given general satisfaction. We have nearly six miles of brick streets and they are all wearing well.

F. M. Lillie, Youngstown, O.—We have brick pave-

ments put down in 1888 and 1889 that are very near as good as when first laid.

#### PAYMENTS ON PAVING CONTRACTS.

Payments on asphalt paving contracts are made as follows:

Altoona, Pa.—In ten-year bonds bearing 6 per cent. interest. Interest and part of principal payable semi-annually.

Buffalo, N. Y.—All but 10 per cent. on completion of work and then 2 per cent. at the end of sixth, seventh, eighth, ninth and tenth years.

Binghamton, N. Y.—When assessments are collected by city treasurer, excepting 10 per cent., which is held until expiration of guaranty.

Baltimore, Md.—Upon completion of work all but 10 per cent., which is held until expiration of guaranty.

Cincinnati, O.—Same as Baltimore.

Cleveland, O.—Monthly estimates and final estimate within sixty days after work is completed, withholding 10 per cent. for period of guaranty.

Columbus, O.—Same as Cleveland.

Camden, N. J.—Monthly estimate less 10 per cent., which is held for period of guaranty.

Detroit, Mich.—On repaved streets, cash on completion of work. On new streets, paving bonds on completion of work.

Erie, Pa.—First payment thirty days after commencement of work, balance in nine semi-annual instalments.

Ft. Wayne, Ind.—Assessments assigned to contractor, who collects them.

Grand Rapids, Mich.—Payments made on estimates, but 15 per cent. retained until work is accepted.

Hartford, Conn.—Eighty per cent. of whole amount in monthly estimates, balance on acceptance of work.

Houston, Tex.—Same as Hartford.

Hoboken, N. J.—Same as Hartford.

Joliet, Ill.—Seven-year bonds bearing 6 per cent. interest.

Kansas City, Kan.—Ten-year bonds, bearing 6 per cent. interest.

Los Angeles, Cal.—Ten-year bonds, one-tenth of principal payable annually and interest payable semi-annually.

New Orleans, La.—Payment made in full on completion and acceptance of every two squares.

Providence, R. I.—Eighty-five per cent. payable on monthly estimates, 10 per cent. at completion of work and 5 per cent. held for period of guaranty.

Salt Lake City, Utah.—Eighty-five per cent. payable on monthly estimates, 5 per cent. on completion of work and 10 per cent. held for period of guaranty.

St. Joseph, Mo.—Paid by special tax bills in full on completion of work.

Syracuse, N. Y.—Seventy-five per cent. payable on monthly estimates, balance on completion of work.

Springfield, Mass.—Total amount payable on completion of work.

Scranton, Pa.—Property owners are privileged to pay assessments in five annual instalments. When work is completed contractors are paid the amount already collected in cash and the balance in street improvement bonds.

Saginaw, Mich.—Eighty per cent. payable on semi-monthly estimates and balance on acceptance of work.

Troy, N. Y.—Seventy per cent. payable on monthly estimates, 10 per cent. when work is accepted and 20 per cent. in three instalments as follows: One-third at five years, one-third at ten years and one-third at fifteen years.

Tacoma, Wash.—Five-year bonds, one-fifth payable each year.

## ELECTRIC LIGHTING RATES.

Through the mayors of a number of cities the League of American Municipalities has secured the rates charged by private companies for arc and incandescent lights for commercial purposes. The table below shows the rates for incandescent lights in twenty-five cities scattered throughout the country.

## INCANDESCENT LAMPS.

City.	Rate.		Discounts.	
	Per ampere hour.	Per 1,000 watts	For prompt payments.	According to amount of bills.
Elmira, N. Y.	\$0.0100			
Rochester, N. Y.		\$1.400		Reductions to 10c. per 1000 On large contracts only
Utica, N. Y.	.0075			
Jersey City, N. J.	.0070			
Indianapolis, Ind.		.1250		
Ft. Wayne, Ind.	.0100		25% in 10 days	
Wheeling, W. Va.	.0075		5% in 15 days	5% to 35%
Portland, Me.		.1500		5% to 40%
Louisville, Ky.	.0100		30% in 15 days	5% to 25%
Harrisburg, Pa.		.1500		20% to 33%
Savannah, Ga.	.0100			
Augusta, Ga.		.1700		
Atlanta, Ga.	.0075			10% to 40%
Denver, Col.	.0100			Reductions to 1/2c. per hr
Salt Lake City, Utah	.0100		10% in 8 days	10% to 28%
Los Angeles, Cal.	.0140			
Oakland, Cal.		.1080		
St. Paul, Minn.	.0120		16 2/3% in 10 days	On large contracts
Charleston, S. C.		.1700		10% to 25%
Nashville, Tenn.		.1800		10% to 33%
Dayton, O.		.1500		5% to 20%
Des Moines, Ia.	.0075			
New Haven, Ct.		.1250		
Springfield, Mass.		.2300		20% to 45%
Lowell, Mass.		.1000		

## ARC LIGHTS.

Rates for arc lights, of 2,000 c. p., are as follows:

Elmira, N. Y.—Until 10.15 P. M., \$6.25 per month; until 12 P. M., \$8 per month; all night, \$9 per month; special lightings, 40 cents per night; no lights furnished for less than eight nights per month.

Rochester, N. Y.—Per hour, 3 1/3 cents. Minimum rate, \$3 per month.

Utica, N. Y.—Per night, 35 cents.

Jersey City, N. J.—Until 8.30 P. M., \$9 per month; until 10 P. M., \$10 per month; until 12 P. M., \$11 per month; all night, \$15 per month.

Indianapolis, Ind.—Per 10,000 watts, \$1.25.

Ft. Wayne, Ind.—Until 12 P. M., \$8.35 per month for single light; \$6.50 per month for each additional light.

Louisville, Ky.—Until 12 P. M., 30 cents per night; all night, 50 cents per night; all day, 40 cents per day; special service, 6 cents per hour.

Harrisburg, Pa.—Until 12 P. M., \$7 per month; all night, \$10 per month.

Savannah, Ga.—Until 12 P. M., \$100 per year; all night, \$150 per year.

Augusta, Ga.—Until 12 P. M., \$6 per month; all night, \$10 per month.

Atlanta, Ga.—Until 11 P. M., \$9.38 per month; all night, \$11.25 per month; discount 10 per cent.

Denver, Col.—Until 10 P. M., \$10 per month; until 12 P. M., \$11 per month; all night, \$17 per month; discount 10 per cent. for cash.

Salt Lake City, Utah.—Until 10 P. M., \$8 per month; until 12 P. M., \$10 per month; all night, \$15 per month.

Los Angeles, Cal.—Until 9 P. M., \$1.25 per week; until 12 P. M., \$2 per week.

Oakland, Cal.—Until 10 P. M., \$2 per week; until 12 P. M., \$2.75 per week.

St. Paul, Minn.—Until 7 P. M., 35 cents per night; until 10 P. M., 40 cents per night; until 12 P. M., 60 cents per night; all night, 95 cents per night, all day, 60 cents per day; discount 5 per cent. for cash in 10 days.

Charleston, S. C.—Per 1,000 watts, 17 cents; discount

10 to 25 per cent., according to amount of monthly bills.

Nashville, Tenn.—Until 9 P. M., \$9.75 per month; until 12 P. M., \$13.33 per month; all night, \$17 per month; discount 10 per cent. for prompt payment.

Dayton, O.—Until 9.30 P. M., 25 cents per night; all night, \$15 per month.

Des Moines, Ia.—Until 12 P. M., \$120 per year.

Springfield, Mass.—All night, 40 cents per night.

Mayor Saltsman, of Erie, Pa., writes: "Competition makes electric lighting here the cheapest of any city in the United States. A person can have his house fitted up with 16 c. p. incandescent lights and the charge will be from 10 to 30 cents per light per month. Arc lights of 1,200 c. p. are \$3.50 per month."

## LICENSING DEPARTMENT STORES.

In many of the cities throughout the country there has sprung up considerable opposition to department stores, and in some cases this antagonism has gone so far as to suggest their suppression. The question of placing a prohibitive tax or license on department stores has been considered by a number of councils. At Denver, Col., the council recently passed an ordinance imposing such a tax on the business as would practically annihilate it. The ordinance has been properly vetoed by Mayor T. S. McMurray, who, in his veto message, makes the following statement of general interest:

"The purpose of this bill, as publicly and privately avowed by its author and supporters, is specially to govern and tax what are known in this community as department stores.

"The question of department stores presents not only in this city, but all over the country, a serious problem. It may be conceded for the sake of argument that many abuses have grown up in connection with the operation of these large aggregations of capital. They have, on the other hand, their advantages in affording for intending purchasers the convenience and economy that generally attends the successful management of large business enterprises. It stands to reason that he who buys largely can sell more cheaply than he who buys in smaller quantities. On the other hand, the success of these large enterprises naturally crowds to the wall smaller concerns, which, with a fixed ratio of expense, are not able to compete with those of larger capital and more economic management.

"But in the consideration of the problem it seems to me that we should act wisely and endeavor to find the particular abuses that are presented by these enterprises, and seek to remedy those abuses, rather than, by attempting something that may be beyond our power, place ourselves in the position of a man simply beating the air.

"Your honorable bodies have already, in my judgment, wisely taken up two of the great abuses of these large department stores and have sought to remedy them by the adoption of appropriate legislation governing child labor and the protection of female employes. That legislation met with my hearty approval, and I sincerely trust that the ordinances referred to will be rigidly enforced. Any other abuse that may be apparent in the management of these large enterprises, in my judgment, should be treated in the same way by appropriate legislation. But in doing this we must be sure that we are acting within the powers conferred upon us as a municipality.

"A municipality has no powers whatever inherent in itself. It is the creation of legislation. Being created by an act of the legislature of the State, its powers are limited by the charter which gives it birth. This bill, therefore, must be tested by the rules laid down in our charter, and if it fails to come up to, or goes beyond,

the standard therein contained, we must admit that it is incapable of enforcement.

"The bill in question now before me provides for the taxation of all business places in the city of Denver, but the tax provided for is not uniform. The city charter provides two modes of revenue by which the city can meet its ordinary expenses. One is found in article 6 of the charter, relating to 'Finance and Taxation,' and by that article the city is given the power to levy certain taxes for city purposes upon all taxable property, real, personal, mixed, within the city of Denver, based upon the total assessment of said property by the county assessor.

"The other mode of revenue is found in article 2 of the city charter, section 20, where certain powers are granted to the city, among which we find in the 10th subdivision the following:

"'Exclusively to provide for the licensing, regulating and taxing of all lawful occupations, business places, trades, professions, amusements, places of amusement, the carrying of passengers, goods or merchandise, and the use of horses or other animals, and vehicles of all kinds.'

"This ordinance, therefore, is based upon the clause in this subdivision, allowing the city to provide for 'the licensing, regulating and taxing of business places.'

"I believe we are justified in arriving at the conclusion that the taxing power referred to in article 6 refers to a property tax, and that the taxing or licensing power referred to in article 2, subdivision 10, refers to an occupation or business tax.

"But this ordinance seeks to base that occupation or business tax not merely upon the amount of property in the shape of capital and so forth employed in the business, but also upon the location of the business itself. In other words, a man with \$100,000 can invest it in ten different lines of business, putting \$10,000 into each line, and pay a tax under this bill of \$125, provided he keeps each of his separate lines of business in a distinct and separate store; but if he concentrates all of these lines of business with the same capital in one store and calls them departments, instead of paying \$125, under this bill he will pay a tax of \$64,000 per annum. It seems to me that this is an exercise of the taxing power that has never been granted to the city of Denver, is not contemplated by the city charter and cannot be sustained.

"It has been publicly and privately stated that the object of the bill is to practically prohibit department stores. I find nowhere in the charter of the city of Denver any power to prohibit these lawful occupations. The words of the subdivision governing this bill grants the power to provide for the licensing, regulating and taxing, etc. I cannot agree that the power to license, regulate or tax includes the power to prohibit. That I am right in this assertion is shown by the fact that in this same section, in subdivision 13, the power is granted the city to prohibit and suppress dance houses, tippling houses, gambling houses, houses of ill fame and so forth. Here, for obvious reasons, the charter grants the power to prohibit, while in the preceding subdivision the power is only given to regulate, license or tax.

"That this bill is really intended to prohibit will be manifest by a little calculation as to how it will affect some of the places of business attempted to be governed thereby. For example, we have in the city of Denver at least one, and perhaps two, stores that have thirty different departments. Under the rule of geometrical progression laid down in this bill the tax upon a store carrying that number of departments would be 67,118,364 per cent., and basing it upon a total gross assets of, say, \$500,000, which would probably be the amount of capital

employed in one or both of these establishments, would make the total amount of money tax to be paid per annum, under the provisions of this bill, \$335,544,320,000 per annum.

"To state this proposition is to show the utter absurdity of the idea that this bill can be intended to do anything else than to bring about the retirement from business of these establishments, could the bill possibly be enforced. So that it appears conclusively that the taxation of these stores is not what is intended under the bill, but the prohibition of the traffic itself, and this prohibition, as I have before pointed out, is not sustained by any power ever granted to the city of Denver in its organic law.

"The power of taxation, in my judgment, never carries with it, applied to lawful business, the power of confiscation and annihilation. This bill undoubtedly proposes to confiscate and annihilate large business interests in this city. Whatever may be our judgment upon the question of the damage to certain interests in the community by the existence of these large department stores, two wrongs can never make a right, and the remedy must be sought elsewhere, through the power of public sentiment or the legitimate exercise of a reasonable power of taxation, which will not be subjected to the charge that under the guise of taxation the city is simply seeking to confiscate and annihilate.

"In any reasonable exercise of the powers conferred under the charter of the city of Denver upon this municipality, seeking to remedy any of the apparent abuses of these large business enterprises, I will be glad to give you my hearty co-operation, but I hesitate to place the city of Denver in the position before the public and the courts of attempting to do that which, in my judgment, is clearly beyond our power."

#### TALKS ABOUT PUBLIC PARKS.

George E. Kessler, superintendent of parks at Kansas City, Mo., in a recent interview, said: "In my opinion, it is a false economy for any city to stint the park appropriation. Our city did that in years gone by, and in the rush of building all parks were overlooked. Then, when the people wanted the parks they were not to be had. I think parks are essential to the development of a city, for the reason that unless the place is made a beautiful one to live in, the people will take little interest in it. To give an instance of this, we had a little plot of ground in one of the densely populated districts, where the children were so numerous that it was dangerous for people to drive in the streets. All the inhabitants of the district were ragged and dirty before the park was improved, but after they saw a little of the green grass the children began to dress better. They washed their faces and cleaned their clothes, and the profane language that was so common before disappeared almost entirely. Now the park is one of the most popular in the city, and is visited by swarms of children and grown-up people. This same condition will prevail in any other city, if the proper attention is given to the park system. We are arranging to make extensive improvements in the parks this summer, and already the city is reaping the benefit of it by adding to its population. There is no economy in keeping the park commissioners on short levies, as their work will show more in the development of the city than any other department."

Detroit's magnificent municipal lighting plant will be open for the inspection of visiting officials all night and every night during the L. A. M. Convention.

## WORCESTER'S NEW CITY HALL.

The new city hall at Worcester, Mass., which was dedicated April 28, is a pure and especially good example of Italian Renaissance architecture, and the building is declared by many architects to be the finest municipal structure in New England and the equal of any in the country. It is of fireproof construction, and stability, utility and convenience were the chief motives in preparing the plans. Plainness of exterior has been avoided by a large amount of ornate and elaborate carving on the walls, on the front and rear porches and on the tower. The interior is not elaborate, but at once gives an impression of substantial worth and quiet dignity.

White marble is used for the supporting columns,

council chamber is elaborately carved. The equipment of the building also includes two large elevators, a modern heating and ventilating plant and an independent system of telephones.

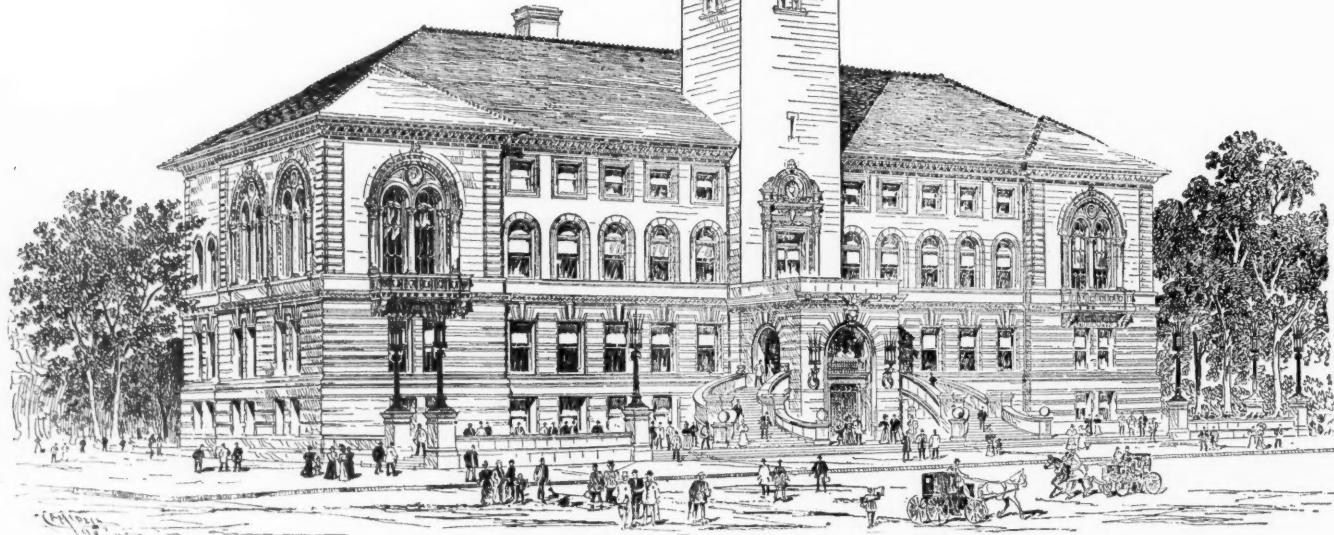
The building is built of Milford pink granite. It is three stories in height, with a basement almost entirely above ground. The main entrance is reached by gracefully curving stone stairways in front, and there is also an elaborate entrance in the rear. The roof is of terra cotta, and a tower rises to a height of 205 feet above the street level. The tower was designed after the Palazzo Vecchio in Florence. Below the first battlement is a large clock, built by the E. Howard company. Inside the first battlement is a public area about 170 feet above ground, from which a fine view of the city can be ob-



RUFUS B. DODGE, JR.,  
Mayor of Worcester.



FRANK B. HALL,  
Prest. Common Council.



NEW CITY HALL, WORCESTER, MASS.

wainscoting and grand staircase, and the floors are of mosaic. The woodwork, with the exception of the mayor's suite, which is finished in mahogany, is selected from the finest of quartered oak, and the large panels in the aldermanic and common council chambers are of especially good stock. The prevailing colors on the walls are light yellow and cream, relieved in the common council chamber with light green, in the aldermanic chamber with maroon, and in the mayor's suite with light green. The hall is lighted with 1,700 incandescent lights. The windows and skylights are arranged so as to get the best possible results for the needs of the various departments. The fixed furniture is of oak with brass trimmings, and the chairs are heavily upholstered in leather. The larger rooms are carpeted, mosaic being used in the public areas. The fixed furniture in the aldermanic and common

tained. Along the front of the building is a plaza bounded by granite walls and steps. The space between the building and the walls is covered with turf and wide granolithic walks.

The building fronts 205 feet on Main street, and has a depth of 85 feet between Park and Front streets. In the basement floor are suites of rooms for the street department, the license commissioners, the health department, including a modern laboratory for the bacteriological diagnosis of disease, the overseers of the poor, the street lighting department, the sealers of weights and measures, the cattle inspectors and the school department.

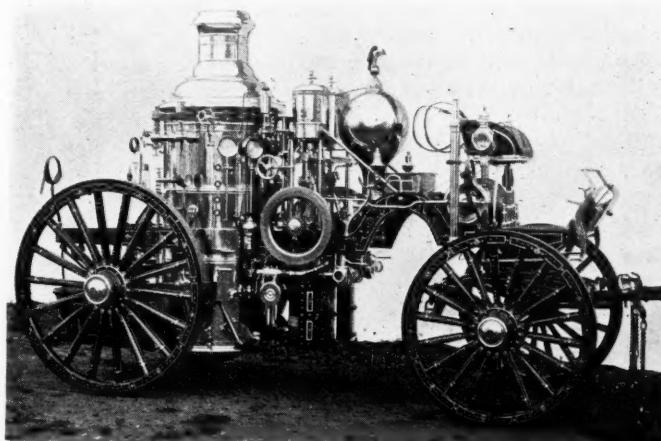
On the first floor are the offices for the city auditor, the city treasurer, the assessors, the water department, the registrars of voters and the city clerk. On the second floor are the offices of the mayor, the city messenger and

the parks commission, the aldermanic, common council and school committee chambers and committee rooms and council lobbies. The third floor is devoted to the public buildings, the engineer's and sewer departments. The sewer department has a complete laboratory, well equipped for the special needs of the complicated system of sewers in the city.

The original appropriation for the building was \$650,000, and the total cost has not been far from that sum. The architects of the building were Peabody & Stearns, of Boston, and the general contractors were Norcross Bros., of Worcester. The order for construction was adopted in November, 1895, during the administration of Mayor Henry A. Marsh. The contract was signed on April 23, 1896, during the administration of Augustus B. R. Sprague, and the corner-stone was laid in September, 1896.

### BIG LA FRANCE ENGINE TESTED.

One of the largest fire engines ever built by the La France Fire Engine Co., of Elmira, N. Y., and sold to the city of Montreal, Can., was tested in the latter city recently. According to the specifications, the engine was called upon to raise seventy pounds of steam in five minutes. It did better than the specifications called for, and raised eighty-six pounds of steam in five minutes. The time was counted from the first appearance of smoke in the smoke-stack. The following was the manner in which steam was raised: In 2 minutes, 5 pounds; in 2½



minutes, 15 pounds; in 3 minutes, 20 pounds; in 3½ minutes, 35 pounds; in 3 minutes 40 seconds, 40 pounds; in 4 minutes, 50 pounds; in 4 minutes 20 seconds, 65 pounds; in 5 minutes, 86 pounds.

After steam was got up, two lines of hose were attached to the engine and water was thrown to a great height and distance. The builders of the engine claim they can make it throw a stream 240 feet high. After the exhibition three lines of hose were attached to the engine and connected with an empty tank. Three thousand eight hundred gallons were pumped into it in 3 minutes and 40 seconds.

Numerous officials and citizens who witnessed the test were highly pleased with the operations of the new engine.

For the Detroit convention of the League of American Municipalities, the Michigan Passenger Association has made a special rate of one fare for the round trip. The other traffic associations will grant a rate of a fare and a third for the round trip. The latter rate will apply throughout the United States and Canada.

### MUNICIPAL REVIEW.

Under this heading municipal reports of all kinds will be reviewed each month. Every report sent to this office will be carefully read and any matter of general interest contained therein will be reviewed in these columns. This department is intended, especially, to give city officials the gist of the reports of their contemporaries throughout the country.

#### ST. PAUL, MINN.—SIXTEENTH ANNUAL REPORT OF THE BOARD OF WATER COMMISSIONERS.

Secretary John Caulfield sends us this ably prepared report, which shows that the St. Paul water department is in its usual flourishing condition, financially and otherwise. The following interesting investigation of the meter system is given:

"The method of charging the consumer for the actual amount of water used is becoming more and more prevalent in all the large cities and towns, and St. Paul has always been in the front rank in adopting and encouraging this system and in making low rates for actual consumption. We have now in St. Paul 2,298 meters, 752 of which were put in during the past season. For the purpose of getting an approximate estimate of the probable waste of water in our distributive system, a record of 215 metered services in the different residence districts of the high service supply has been tabulated, and the consumption per service per day worked out. A census was also taken of the number of people supplied by these services and from this the consumption per capita per day was obtained, all of which results are shown in the following tables:

#### CONSUMPTION OF WATER PER SERVICE.

	Number of Services.	Daily Consumption, Per Service, Gallons.	
High service.....	8,327	421.2	
West St. Paul high service.....	100	381.5	
Low service from Vadnais Lake.....	4,162	906.1	
Low service from Phalen Lake.....	9 3	443.9	
Total low service.....	5,235	728.8	
Total high and low service.....	13,562	539.9	

215 metered services in the high service.

#### RESIDENCE DISTRICTS.

	1st and 2nd Wards.	Midway District.	7th and 8th Wards.	Total.
Number of services.....	62	73	80	215
Number of people.....	309	343	436	1,088
Number of people per service.....	4.984	4.690	5.45	5.06
Daily consumption per service, gal.	74.32	97.21	177.89	122.07
Daily consumption per capita, gal.	14.34	23.73	31.90	23.494

"The services used were especially selected to be representatives of their districts, and while the number of services in the table is entirely too small to draw any positive conclusion (being only about 2.6 per cent. of the whole number of services), yet the results obtained seem to be of sufficient importance to justify the careful tabulation of all the metered services, at least on the high service, for next year, in order that more reliable information may be obtained. The detailed records from which the table is compiled give sufficient evidence of the promptness with which repairs are made when the water wasted by defective plumbing has to be paid for."

#### CINCINNATI, OHIO.—ANNUAL REPORT OF THE ENGINEER DEPARTMENT OF THE BOARD OF ADMINISTRATION.

This excellent report, prepared by H. J. Stanley, chief engineer, contains a great deal of valuable information, from which we take the following note:

"The modern pavements of Cincinnati are granite, asphalt and brick, and where grades exceed six per cent., boulders. The granite, asphalt and brick are uniformly laid on a six-inch concrete base or foundation. Boulders

have been paved on a concrete foundation with satisfactory results. The usual foundation for boulder pavement is, however, eight inches of compact broken stone. The concrete used for the foundation-work is made up of one part common cement, two parts sand, and from five to six parts finely-broken stone. Many miles of concrete foundation laid as specified have been cut through in laying conduits and renewing street-railway tracks. It was found uniformly excellent. We have concluded that six inches of concrete is sufficient for pavement foundations in all cases. Earth foundations are subdrained where necessary. Earth that 'sponges' under the roller is removed and broken stone filled in its place. New trenches are re-excavated, to the bottom if necessary, and refilled with stone. No concrete is laid on ground that is not absolutely firm. The paving-bed, commonly called cushion, for granite blocks and brick is two inches of sand. The granite-blocks and bricks are paved close. The granite pavement rammed twice; the brick pavement is rolled diagonally, along and across, until the surface is perfectly true and even; places inaccessible to the roller are rammed under flatter. The thorough ramming of the granite and the rolling of the brick pavement is absolutely necessary to secure a good surface and a durable pavement. Joint filling for granite pavement is  $\frac{3}{8}$ -inch pebbles and coal-tar pitch; joint filling used for brick pavement is coal-tar pitch. Portland cement grout joints seem to render the pavement more durable, but are objectionable on account of the resulting monolithic condition. Sand joints have given fairly good results in both granite and brick pavements. Pitch, however, seems preferable to grout or sand. The granite blocks used are generally twelve inches long, four and one-half inches wide, six inches deep, and are almost perfectly rectangular in shape. The brick used are nine inches long, three inches wide, and four inches deep. The test for quality is to lay a patch of the brick upon a street with moderately heavy traffic, and pass judgment from inspection at the expiration of sixty days' time. Asphalt pavement is laid on a six-inch concrete foundation, as before described, with one-half-inch cushion coat and a two-inch wearing surface, or two and one-half inches in depth of asphalt. The asphalt admitted to use here is the Trinidad Pitch Lake, admitted in 1885; Bermudez Pitch Lake, admitted in 1895; and Alcatraz from Santa Barbara County, Cal., admitted in 1897.

#### CLEVELAND, OHIO.—FINANCIAL REPORTS FOR 1897.

This is a book of over 300 pages, bound in full morocco flexible covers, and contains a complete statement of the financial affairs of the city of Cleveland. The reports are the work of City Auditor H. L. Rossiter and his deputy, Albert F. Crosby, and they are entitled to much credit for the thorough manner in which every item is presented to the public. We take from the reports the following items:

During the year the assets of the city increased to the extent of \$2,981,340.09; the liabilities increased \$1,327,909.34, making a net gain to the city of \$1,653,430.75. There is a net increase of operating expenses of \$82,480.81, made up largely as follows:

Waterworks . . . . .	\$14,584 27	— Due to increase of plant.
Park . . . . .	42,685 46	— " " parks.
Police . . . . .	24,954 10	— " " force.
Lighting . . . . .	10,032 68	— " " lights.
Infirmary . . . . .	15,261 89	— " large increase of inhabitants.

On the other hand, there will be noticed a marked decrease in the operating expenses in the bridge, market, sanitary and house of correction departments. There is an increase in the income or earnings of \$103,593.63, in spite of the fact that over \$50,000, due and payable from the county of Cuyahoga for care of insane at infirmary, has not yet been paid.

The house of correction still continues to be more than self-supporting, showing a profit over and above all expenses of \$4,813.81. The waterworks yielded a net profit of \$365,052.92; the market fund a profit of \$38,231.07; and the cemetery fund a profit of \$2,591.93. As soon as West Park Cemetery is ready to open this last item will increase largely, there being practically no city cemetery lots for sale this past year except in Woodland.

The city tax levy was cut down from \$13.75 per \$1,000 on the duplicate in 1896 to \$13.60 per \$1,000 in 1897. This is the lowest rate of tax levy for city purposes since 1886, and the lowest rate but one since 1878.

#### GRAND RAPIDS, MICH.—ANNUAL REPORTS TO THE COUNCIL. Submitted April 26, 1898.

The annual report of the mayor and city clerk showed the total bonded indebtedness of the city April 26, 1898, to be \$1,884,000. Bonds paid during the past year amounted to \$143,000; new bonds issued, \$325,000. Special assessments for street improvements amounted to \$228,498; for sewers, \$14,860; for street opening, \$8,895.47. A total of 6.193 miles of streets were improved, at a cost of \$123,233; sewers, 4.541, at a cost of \$14,860; water mains laid, 5.784 miles, making the total length of mains laid, 126.945 miles; hydrants set, 44, making a total of 1,197; streets reimproved, 3.125 miles, at a cost of \$109,695.

The report of the city comptroller for the year ending April 21, 1898, includes the usual detailed statement of the cost of maintaining each department of the city, a statement of bonded indebtedness compared with 1896 and 1897, a complete reinventory of municipal property, both personal and real, inventories of all departments, a detailed statement of moneys expended for special improvements during the year, with detailed charges made by the same on the contingent and general funds, a statement of quit claim deeds issued during the year, and a report of the tax titles owned by the city at the present time. Disbursements by the various departments are shown to be as follows: General fund, \$101,112.82; common council, \$14,448.47; marshal's office, \$9,278.76; comptroller's office, \$4,495.25; clerk's office, \$6,882.38; treasurer's office, \$6,454.07; tax department, \$7,470.27; city attorney's office, \$4,731.60; board of health office, \$5,909.46; board of public works, \$11,357.93; city hall, \$10,136.35; board of assessors, \$4,948.55; building inspector, \$343.63; milk inspector, \$389.03; police court fund, \$2,060.54; justice court fund, \$3,887.66; park fund, \$3,117.36; fire department fund, \$111,713.06; police department fund, \$88,554.46; contingent fund, \$9,937.22; poor fund, \$13,840.03; poor supply store, \$2,393.18; superior court, \$3,686.25; John Ball park fund, \$10,955.58; market site fund, \$22,662.29.

The report of the poor commission states that explanation in regard to the matter of burials is necessary, as the commission has been criticised, and the system which it adopted disapproved by many. The system of burials now in force is the contract system, whereby Shannon & Stoughton, as the lowest bidders, get \$12.25 for the burial of adults, and \$3 for opening and closing the grave. In defense of this system, which is criticised, it is stated that it had been the practice to allow \$12 for the burial of adults and \$8 for children. But they soon learned that this allowance was often abused by the undertaker and friends of the deceased person, and amounted simply to the contribution of \$12 from the city in order to give a fine funeral, sometimes costing as high as \$40. While the former president, Mr. Wiley, was in office, he consulted with several undertakers, and gave the matter a good deal of attention in order to learn just how much money ought to be spent to give a poor person a re-

spectable burial, and it was agreed on by all that the following items, namely, embalming and preparing the body for the grave, an opportunity for religious services, a rosewood-finished coffin, a planed box, a covered burial wagon and one carriage would constitute a respectable burial. These items were let by contract to the above-named firm, with the understanding that the friends could furnish as many more carriages as they desired, and also that they could substitute any of the items they liked at their own expense, but in that case it should not be charged to the city.

**SEATTLE, WASH.—ANNUAL REPORT OF THE CITY COMPTROLLER FOR 1897.**

This is a most exhaustive review of the finances of the city and its careful preparation reflects great credit on Will H. Parry, the city comptroller. The report says: "It is with pleasure that I call attention to the greatly improved condition of the city's finances. Every obligation has been promptly met, unusual expenses have been paid, and the city starts the new year with a larger cash balance than it has had for several years. After remaining on a cash basis for more than four years of greatest depression, now that the revenues are becoming larger and more certain of collection, there can be no excuse for departing from it. The past two years have been the most trying in a financial way in the history of the municipality; but the closing days of the year 1897 give an augury of better times. During 1896 and until November, 1897, the collections of revenues were so small and uncertain that it was only by the closest management and the strictest economy that the obligations of the city were met and its credit maintained. The remission of penalties and interest on delinquent taxes paid prior to November 30 induced many taxpayers, who for several years had taken advantage of the lax revenue laws, to pay their taxes, and these collections, together with the savings of economical administration, have put the treasury in far better condition at the beginning of 1898 than was anticipated by the members of the council and the finance department at the time of fixing the tax levy for the year. Not only have the current expenses and fixed charges of the city been promptly met, but the interest-bearing debt has been appreciably reduced." The report contains tabulated statements showing that the total assessed valuations have been reduced from \$43,802,716 in 1892 to \$30,714,128 in 1897, the tax rate for city purposes from 23.3 mills in 1892 to 19.25 mills in 1897, and the actual amount of taxes assessed from \$445,429 in 1892 to \$332,110 in 1897.

**PROVIDENCE, R. I.—ANNUAL REPORT OF THE CITY ENGINEER FOR 1897.**

This report, by Otis F. Clapp, city engineer, is a very carefully prepared document and contains full information concerning the municipal improvements of the year. The most important improvement noted is the new high pressure fire service, which was fully described in a special article published in the April number of CITY GOVERNMENT.

**BUFFALO, N. Y.—ANNUAL REPORT OF THE PARK COMMISSIONERS FOR 1897-8.**

The expenditures for labor and material have amounted to \$272,942.68, and there remains a balance of \$343,147.96 to the credit of the commissioners. Many improvements have been made in the numerous parks, special attention having been given to the botanical and zoological collections. On January 1, 1898, there were 138 specimens in the zoological gardens. Regarding bicycle paths, the report says: "Two bicycle paths each eight feet wide, with an aggregate length of 19,692 feet, were built in July and August along the parkways. The depth of the cut made in the sod was four inches, which is filled

up with two and a half inches of crushed stone of the ordinary macadam sizes and one and one-half inches of finely screened cinders. A portion of the paths is surfaced with stone screenings, as a relative test of the fitness of the two materials. As the weather was unusually dry during the next two months after the paths were opened, they were sprinkled twice each day with a narrow gauge sprinkler, having tires eight inches wide, the track of the rear wheels being outside the track of the front wheels. The two strips, each about fifteen inches in width, daily rolled by these broad wheels, were kept in a uniformly good condition, but the remainder of the path had usually a loose, gritty surface, because the pneumatic tires of the bicycles, instead of packing the path, loosened the surface by suction." Up to January 1, the city of Buffalo had invested \$4,510,243 in public parks.

**ATLANTA, GA.—ANNUAL REPORTS OF THE CITY FOR 1897.**

This is literally a gilt-edged book, with about 200 pages and bound in leather. It contains Mayor C. A. Collier's address, reports of council committees, city officers and boards. It shows the income of the city, and from what sources derived; the expenditures of the city, and how expended; and, in fact, a complete record of municipal affairs in Atlanta for the year 1897. An introductory note says: "We think that we have a good city and a progressive city, and hope the reader of this volume will find much useful and interesting information within." Many of the reports contained in the volume have already been noticed in these columns.

**YOUNGSTOWN, OHIO.—ANNUAL REPORTS OF THE CITY.**

This neatly printed volume contains the reports for the last fiscal year of the chief of police, the fire engineer, the city civil engineer and the city clerk. The book reaches this office with the compliments of F. C. Brown, city clerk. The reports of the fire engineer and the police chief are mentioned elsewhere in this paper. City Civil Engineer Lillie reviews the street and sewer work of the year, and in regard to resurfacing old brick pavement with asphalt says: "The old brick pavement is first thoroughly swept and washed clean; after it is dry it is heated with surface heaters. This destroys all combustible matter and completely dries out the brick. While still warm the surface of the brick is 'painted' with a thin coat of asphalt applied with brushes. The asphalt is reduced to work easily by mixing with a very volatile oil. The holes and depressions in the old pavement, if deep, are filled with broken stone mixed with asphaltic cement, and if shallow with the same material as the wearing surface and thoroughly tamped. On this the wearing surface is laid in the usual manner. Wick avenue repaved in this manner in '96, and Phelps and Hazel in '97, give every indication of being a perfect success." The city clerk's report shows the receipts and disbursements of the various funds and the condition of the city debt. The total indebtedness of the city is shown to be \$580,301, of which \$240,301 are special improvement bonds and \$240,000 water works bonds.

**MANCHESTER, N. H.—THE MAYOR'S MESSAGE TO THE CITY COUNCILS, FEBRUARY 1, 1898.**

Mayor William C. Clarke reviews the progress made by the various departments during the past year and makes recommendations for still further improvements in the municipal service. The excellent financial condition of the city is shown by the following quotation: "In some respects the results of the year 1897 were extremely gratifying. For the first time for a period of years the current expenses of the year were fully met by the annual receipts. No bonds for any purpose were issued, no money borrowed except the customary loan in anticipa-

pation of taxes, every outstanding bill against the city, so far as I am able to learn, was paid, and on the first day of January, 1898, there was a balance of net cash in the treasury to the credit of the city of \$122,052.37. In addition to this there was a net reduction of the city debt of \$27,250, while the sum of \$44,175 was added to the city's sinking fund." The total bonded debt of the city is \$1,890,000, including \$900,000 of water works bonds.

**PEORIA, ILL.—CITY COMPTROLLER'S REPORT FOR 1897.**

In this book City Comptroller William D. Meisser sets forth the financial transactions of the city in complete form. The total bonded debt is \$514,500, of which \$295,000 is for water works. The real estate and personal property owned by the city is valued at \$786,000.

**DUBUQUE, IA.—REPORTS OF THE COMMITTEE ON FINANCE AND CITY OFFICERS.**

This volume contains the reports of all the city departments for the year ending February 28, 1898. The bonded debt amounts to \$691,595. Mention of the fire chief's report is made in another column.

**FALL RIVER, MASS.—TWENTY-FOURTH ANNUAL REPORT OF THE WATUPPA WATER BOARD.**

The result of an investigation to ascertain the cause of a large waste of water is published, showing that rate takers allow the water to run to prevent freezing. The meter system is reported to have proved itself the best check known to prevent excessive waste. The receipts for water amounted to \$147,737.50; other receipts, \$7,062.38; expenditures for management, repairs, etc., \$51,915.46; bills for extensions, \$26,400; bills for fire hydrants, \$1,000; bills for water tank, \$7,321.58; paid for interest, \$103,155.

**LITTLE FALLS, N. Y.—THIRD ANNUAL REPORT OF THE BOARD OF PUBLIC WORKS.**

The work treats of water works, cemetery, parks, sewers and streets, and is of local interest. The board expresses the opinion that a change from macadam to brick pavement in the business streets would be desirable.

**WILMINGTON, DEL.—TWENTY-EIGHTH ANNUAL REPORT OF THE BOARD OF WATER COMMISSIONERS.**

The receipts for the year were \$154,685.57; disbursements, \$84,985.43; surplus, \$69,700.14. The daily per capita consumption was 78 gallons. There are 573 meters in use.

**GLOVERSVILLE, N. Y.—EIGHTH ANNUAL REPORT OF THE ENGINEERING AND STREET DEPARTMENTS.**

The following statistics are taken from this report: Total miles of street pavement, 3.45, of which 1.56 is brick, 1.81 cedar block and .08 macadam; miles of sewers, 19.2; miles of water mains, 22.91; fire hydrants, 208; electric street lights, 108; population, 18,000.

**LIMA, OHIO—ANNUAL REPORT OF THE CITY CLERK.**

This report, prepared skillfully by C. E. Lynch, city clerk, is for the year ending March 31, 1898, and shows all the financial transactions of the city during that period. The total amount of bonds issued and delivered during the year was \$78,300, and the total amount redeemed was \$10,200. The total bonded indebtedness of the city on the date of the report amounted to \$566,600, made up almost wholly of waterworks and paving obligations. It is reported that the solicitor and clerk have codified the general ordinances, so that it is no longer necessary to examine all of the books back to the year 1842 to find what laws and franchises are still in force.

**IRONTON, OHIO—ANNUAL REPORT OF THE CITY CLERK.**

George H. Davis, city clerk, presents in most convenient and complete form an itemized statement of the

receipts and disbursements of the various municipal funds and other valuable information pertaining to the finances of the city. For the year ending March 1, 1898, the total receipts of the various funds were \$120,965.22; expenditures, \$113,304.21; balance, \$7,661.01. Bonds issued during the year amounted to \$51,253.80; bonds redeemed, \$54,610.71. The total bonded debt on the date of the report was \$325,279.34.

**WASHINGTON, D. C.—REPORT OF THE HEALTH OFFICER OF THE DISTRICT OF COLUMBIA FOR 1897.**

Dr. William C. Woodward, the health officer, gives a very complete report of his work for the year. The report contains 340 pages and a number of larger charts, bound neatly in cloth. Vital statistics, private hospitals, relief of the poor, contagious diseases, inspection of foreign vessels, inspection of nuisances and foods, garbage and the chemical laboratory are among the many subjects treated, and the report also contains the laws and regulations relating to public health and a list of physicians entitled to practice in the district. In regard to garbage, Dr. Woodward reports that the amount collected during the year was 18,928 tons, or an average of 68.34 tons per thousand inhabitants. The service so far as collection is concerned has been very satisfactory. The same cannot be said, however, in reference to disposal. The Brown garbage crematory, the operation of which, from a sanitary standpoint, has been satisfactory, has been closed for about six months, because of business differences between the contractor for the collection and disposal of garbage and the builder of the furnace; and the Smith crematory, which began operations January 26, 1897, has been the source of much complaint, some of which, in the opinion of this department, has not been altogether without foundation. The result has been that during a greater part of the year garbage that should have been cremated has been disposed of by removal in open scows to the banks of the Potomac, beyond the limits of the District of Columbia, for use by the farmers, it is alleged, as a fertilizer. The cost of the garbage service was \$57,000, of which \$55,974 was paid to the contractor and the balance to inspectors.

**FALL RIVER, MASS.—ANNUAL REPORT OF THE STREET DEPARTMENT FOR 1897.**

This report comes from Frank A. Thurston, superintendent of streets, and shows the amount of new and repair work done on streets and sewers during the year. In regard to paving the report says: "The observant citizen has fully recognized that one of the most essential factors of a city is good paving. It is to the public welfare of our city that the streets should be paved with some material of a lasting nature that may be kept cleaned. Pavement has been rapidly supplanting macadam on account of its appearance, its durability and its sanitation. I consider it advantageous to the city to continue to lay pavements on the principal streets with a material of this kind to a greater extent than has been done in the past, as Fall River at the present time has less miles of paved streets than any city of its size in the country. The benefits to be derived from hygienic pavements according to statistics show a marked decrease in mortality. On January 1, 1898, there were 6,622 miles of paved streets, consisting principally of cobble stones and granite blocks, with a small stretch of asphalt measuring 211.98 square yards. This stretch of asphalt paving, which was laid on Granite street in 1896, in front of the new police building, has met with general satisfaction, so much so that I recommend that this kind of pavements be laid on streets of reasonable grade." The length of streets sprinkled in 1897 aggregated thirty-five miles, the work was done with twelve double and eight single

watering carts, and the cost was \$5,908.86. The report says that at present a force of twenty-one men with push brooms are regularly employed to sweep the paved streets of the city during the day and during the inclement weather they are consigned to caring for the street crossings throughout the city. During the warm season the streets were swept with machine brooms but once a week, early Sunday morning, on account of the limited appropriation. A new five-year contract for electric street lights was made during the year. The price per light was reduced from 42½ cents to 36 cents per night, with an alternating scale providing for a reduction of ½ cent per light per night for every additional 100 lights added to the number that was in use at that time, which was 503, until the price is 34 cents per lamp per night, which is the lowest price named in the contract. The contract also provides for an outage of 3½ cents per hour.

PEABODY, MASS.—ELECTRIC LIGHT REPORT FOR 1898.

Manager Henry P. Hutchinson, of the municipal electric light plant, issues a very complete report for the fiscal year just ended, from which we take the following figures: Expenses of maintenance and operation, \$13,243.75; light sold, \$5,757.89; actual cost of town light, \$7,485.86; depreciation and interest, \$5,668.87; total cost of town street lights, allowing depreciation and interest, \$12,293.63; average number of street arc lights, 161; average number of street incandescent lights, 8.3; hours street lights burned, 3,714.

FALL RIVER, MASS.—AUDITOR'S REPORT FOR THE YEAR ENDING DECEMBER 31, 1897.

Henry W. Clarke, city auditor, gives a comprehensive review of the financial transactions of the year and a complete statement of the liabilities and resources of the city in this book, which comprises upwards of 150 pages. On January 1, 1898, the municipal debt was \$2,105,970.12; water debt, \$1,421,252.55; total, \$3,527,222.67. The total amount of the sinking funds on the same date was \$1,052,907.33. The total annual expenditures for the principal departments were: Fire department, \$109,472.22; police department, \$129,863.89; public schools, \$209,991.28; street lighting, \$81,915.83.

PERSONAL.

—Sumner Thomas has been appointed street commissioner of Glens Falls, N. Y.

—Ex-Mayor I. R. Litler, of Harvard, Neb., has been elected a member of the council of that city.

—William Towers has been appointed street commissioner by the council at New Britain, Conn.

—Arthur Thomas, city engineer; Dr. W. E. Graund, health commissioner; F. J. Sequin, city clerk, and T. L. McIntosh, city attorney, are recent appointments at Superior, Wis.

—L. G. Hurd, city attorney; L. S. Martin, water commissioner; S. B. Jones, street commissioner, and I. D. Howard, city physician, are new appointments made at Harvard, Neb.

—A. Brooks Celiax, city engineer of Hazleton, Pa., has been re-elected for a term of three years by councils. He is a most competent official, and his services are properly appreciated.

—Dr. Frederick M. Schulz is the new health commissioner of Milwaukee, having succeeded Dr. Walter Kempster. Dr. Schulz is a native of Milwaukee, and one of its leading physicians.

—Sumner T. Bisbee, city clerk of Keokuk, Ia., who is captain of a militia company, has been granted leave of

absence, so that he may serve in the war. W. L. Johnston will act as city clerk during Capt. Bisbee's absence.

—Charles B. Thimmens, superintendent of water works; Samuel F. Crabbe, city engineer; Roland H. Johnston, street commissioner; C. B. Wade, city assessor, and James M. Rowe, city auditor, are recent appointments at Fargo, N. D.

—J. Edward Mershon, the new city solicitor of Des Moines, Ia., is a strong advocate of municipal ownership and will doubtless give Mayor Mac Vicar valuable assistance in carrying out his avowed policy in regard to the light and water interests.

—Mayor William C. Maybury, of Detroit, was a caller at the CITY GOVERNMENT office on April 4. The mayor is enthusiastic over the coming convention of the League of American Municipalities, which is to be held in his city in August. He predicts a large attendance, and promises that the delegates will be royally entertained.

—David S. Rose, Milwaukee; J. H. Quick, Sioux City, Ia.; Victor Jennings, Council Bluffs, Ia.; Alex. Williams, Dunkirk, N. Y.; John J. Seay, Rome, Ga.; Alfred Steele, Jamestown, N. D.; P. W. McGillie, Madison, S. D.; John Dinnie, Grand Forks, N. D.; C. W. Overstreet, Sedalia, Mo.; Dr. P. J. Kirschner, St. Joseph, Mo.; W. A. Hall, Springfield, Mo.; Calvin G. Sutliff, Lockport, N. Y.; J. L. Root, Keokuk, Ia.; S. H. Brashear, Houston, Tex.; Charles W. Whelan, Madison, Wis.; C. F. Hardy, Beloit, Wis.; Frank J. Edwards, Helena, Mont.; William H. Dressler, Alliance, O.; C. H. Berg, Dubuque, Ia.; H. S. Prophet, Lima, O.; George Nemier, Findlay, O.; J. A. Dienderfer, Defiance O.; J. R. Lindemuth, Dayton, O.; Miles S. Curtis, Battle Creek, Mich.; George R. Gold, Flint, Mich.; Jacob Baer, Grand Haven, Mich.; P. C. Keliher, Sault Ste. Marie, Mich.; J. M. Babcock, Niles, Mich.; George R. Perry, Grand Rapids, Mich.; Dan W. Stewart, Big Rapids, Mich., and Charles J. Davis, Lansing, Mich., are new mayors who have been inaugurated.

TOLEDO OFFICIALS PLEASED.

TOLEDO, O., May 5, 1898.

City Government Publishing Co.,  
New York city:

Gentlemen:—I enclose you list of names and addresses of forty-five present members of common council, to which you will forward CITY GOVERNMENT. Those members of the committee and council who have been receiving CITY GOVERNMENT speak highly of the publication, and report they find many things therein helpful to them in serving as municipal officers and members of the council.

Respectfully yours,  
(Signed) LEM P. HARRIS, City Clerk.

PITTSBURG ASPHALT CONTRACTS.

A large number of asphalt paving contracts were let at Pittsburg, Pa., on April 21, the successful bidders being the Alcatraz Company, J. C. McFadden, Evan Jones and the Pennsylvania Asphalt Company. The asphalt price, \$1.37 a square yard, is the lowest ever secured at Pittsburg.

—The Law Battery Co. has been leased by the Gordon-Burnham Battery Co., of New York, and all goods manufactured by either company can hereafter be obtained direct from the office of the Gordon-Burnham Co., who have moved to 594 Broadway.

## CITY GOVERNMENT.

*Devoted to all Departments of Municipal Work.*

PUBLISHED MONTHLY BY

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## SPECIAL NOTICE.

*City officials and friends of City Government visiting New York are cordially invited to make the office of City Government their headquarters during their stay in the city. Desks, stenographers and stationery are placed at their disposal, and their mail may be addressed in our care.*

## NOTE AND COMMENT.

Mr. George W. Duncan is a real estate agent of Macon, Ga. As a side issue he has undertaken to represent the Trinidad asphalt combine in his home city. Selling suburban lots in dull times is an easy task compared with the work of upholding the claims of the asphalt combine; so it might have been better had Mr. Duncan stuck to his original calling. By closely studying the methods of experienced and hardened trust agents he may in time make a fairly successful showing in the asphalt business, but there is no gainsaying the fact that he has started out wrong. The experienced drummer of Trinidad asphalt wins what success he gets by methods very different from those adopted by this Macon novice; his ways are silent and mysterious, while Mr. Duncan commits the folly of jumping into a newspaper controversy with a contention that cannot possibly stand the light. Our esteemed Macon friend publicly proclaims that all the decent asphalt streets in the country were made of the Trinidad Lake material, and that pavements made with other asphalt have cracked, rotted and gone to pieces. Such a claim made by a competent engineer might have some weight with the public, but, unfortunately, Mr. Duncan is not an engineer at all, and what he knows about asphalt is pretty well epitomized in his declaration that Alcatraz asphalt is "mined from veins underground." A little later on, when Mr. Duncan learns that any competent and disinterested engineer will guarantee to make just as good a pavement with Alcatraz as can be made with Trinidad material; that New York, Philadelphia, Detroit, Utica, Baltimore, Omaha, Brooklyn and many other cities have successfully used Alcatraz; that Trinidad streets in Brooklyn, Peoria, Detroit and other places have gone to pieces in short order, and that scientific investigation long ago determined that Trinidad asphalt is no better for

paving purposes than many others, he will not be so eager to make absurd claims in the public print. Mr. Duncan is plainly on a wrong tack, and we can set him right if he will allow us. First of all, as an agent of the Trinidad trust, he must avoid publicity; the publication of any facts regarding the relative merits of the various asphalts will not give Trinidad any advantage, and any fabrications are quite sure to be promptly nailed by intelligent persons. To arouse public interest in the asphalt paving question gives the Trust only a fair show—and it needs more than that. Mr. Duncan started out wrong. He should have had the authorities of his city draw up the asphalt paving specifications so as to exclude every asphalt but Trinidad, and then he could have taken all the contracts without competition and at big prices until the people began to think the matter over. That is the way the more experienced agents of the combine have worked. But Mr. Duncan has made a fatal error; he has wrecked himself at the very start on the rocks of publicity.

Mayor Rose, of Milwaukee, does not propose to have the street railway company exceed its franchise rights, and he has therefore called the attention of the board of public works to the fact that the street car people have gone into the telephone business. They have strung a number of telephone wires on trolley poles and completed a perfect system, connecting all of their various plants and offices. The charter of the company does not contemplate that it should do a telephone business or string wires for any purpose except lighting or the transmission of power.

Now that Mayor Rose, of Milwaukee, has determined to confine the street railway company strictly to the business contemplated by its charter and prevent it from building private telephone lines along its trolley poles, why isn't it in order for some bright mayor to put a check on the advertising business carried on by the street car people? In nearly every city of this enterprising country the street cars are daubed with advice and information as to "that tired feeling," what kind of hooks and eyes have the most prominent humps, the particular kind of baked beans that are best for the happiness of domestic life, etc., etc. The citizen may look in vain for a sign indicating the destination of a car, but he will find plenty of boards, flags and streamers extolling the virtues of baking powder, cough medicine and headgear. Our street cars have been transformed into traveling billboards that are unsightly both inside and outside. The incessant parade of these advertising daubs add no beauty to our streets, cultivates no lofty thoughts in our minds, and makes profanity no less in demand. It is only a question of time when the man whose mind fills up with the doggerel of street car advertising will need the strait-jacket. The best argument against street car advertising, however, is that it is positively unnecessary to the public and yields no revenue to the public treasury. We have never been able to find anything in the charter of any street car company which gives it the right to do an advertising business and use the public thoroughfare for the purpose of carrying on such a business. If we must have our street cars covered inside and outside with advertising placards let the public get some benefit from it. Why not compel the street railway companies to turn into the municipal treasures the immense sums they receive for the advertising privileges which they have no legal right to sell?

The traction companies of Chicago which will seek extension of their franchises under the Allen law will have to "do business" with a good many aldermen in order to

get away from Mayor Harrison's grasp. It takes forty-six aldermen to override the mayor's veto, which will be given to any ordinance which does not allow what he considers adequate compensation to the city for the rights granted. The mayor believes the traction companies should pay to the city 10 per cent. of their gross receipts and also pave from curb to curb the streets they occupy, and sprinkle those streets during the summer. As so just a compensation to the city would probably reduce the 10 and 12 per cent. dividends on watered stocks, it is very likely that the traction companies will endeavor to "arrange" with the aldermen for a much lighter tax. Let us wait and see what the Hon. Johnny Powers and his gang in the council do to the companies.

The Louisville council has adopted an ordinance making it a misdemeanor for the failure of any one on a bicycle, when colliding with another bicycle or vehicle, to assist the injured party and give his correct name. This is good as far as it goes, but how about assisting the poor pedestrian who gets his ribs caved in or his nose broken by coming in collision with a reckless bicycle rider?

Newsboys of Council Bluffs, Ia., have petitioned the council to pass an ordinance requiring a license, at \$2 a year, for selling papers on the streets. Is this an attempt on the part of a ring of capitalistic newsboys to monopolize the trade in war extras?

New York has many nuisances, but the greatest is probably the push-cart brigade which lodges in the busiest of the down-town streets. For a pittance of a license fee hundreds of lazy, dirty and loud-mouthed beings are permitted to establish their push-cart stores in the crowded streets and obstruct the traffic of better men who pay high rents and good taxes. There is absolutely no reason for the tolerance of this nuisance. The city doesn't need the miserable income from the licenses, the New Yorker doesn't want to buy the trash sold from push-carts, the stranger should be protected from buying it, and the vendors are not deserving of charity, as they are generally able-bodied men fit for honest avocations. The men who rent the stores and offices along New York's busy thoroughfares are the ones from whom the taxes for the maintenance of the streets are derived. Are they not entitled to the use of these streets, free from the bothersome obstruction of push-carts? There isn't a business man in down-town New York who would refuse to contribute a diamond for a badge of honor to the councilman who first introduces an ordinance for the abatement of the push-cart nightmare.

The Furnas pneumatic street cleaner was given a trial at Utica, N. Y., on April 16, and the officials of that city were not entirely pleased with its operation. While the machine picked up the dry dirt, it failed to remove the droppings and wet matter from the pavement. This failure was charged to the fact that there had been rain the previous day, and the moisture had pasted some of the dirt to the pavement. That a street cleaning machine should operate successfully only on a thoroughly dry pavement is a proposition which officials generally do not seem to entertain. In the trial the Furnas machine required three horses and two men to operate it.

#### DETROIT CONVENTION PROGRAMME.

The executive committee of the League of American Municipalities, composed of Mayor MacVicar, of Des Moines; Mayor Collier, of Atlanta; Mayor Black of Columbus; Mayor Warner, of Peoria; President of the

Council Walker, of Trenton; President of the Council Leitch, of Wilmington, and Secretary Gilkison, have decided upon the programme for the Detroit convention. The members of the committee are of the opinion that long speeches and papers, such as were given at the Columbus convention last year, are not as desirable as short talks, and they have therefore decided to arrange the Detroit programme so that every mayor and councilman present will have an opportunity to participate in the discussions. The committee have selected what they consider seven of the most important subjects involved in municipal government; these seven topics have been placed on the programme for general discussion at the various sessions. The discussion of each topic will be opened by two or three formal addresses, limited to ten minutes each. This arrangement will secure a full and unlimited discussion of the important municipal questions of the day by city officials of knowledge and experience from all parts of the country. The programme as arranged, is as follows:

#### MONDAY, AUGUST 1.

10 A. M.—Address of Welcome—Hazen S. Pingree, Gov. of Michigan.

Address of Welcome—William C. Maybury, Mayor of Detroit.

Response—John MacVicar, President League of American Municipalities.

2 P. M.—Reports of Officers.

#### Addresses and General Discussion:

Garbage Disposal—What has been the experience of municipalities in attempting to collect and dispose of garbage in a sanitary and economical manner? Are the present utilization and incineration inventions satisfactory and what does it cost to operate them?

4 P. M.—Entertainment.

8 P. M.—Addresses and General Discussion:

The Civil Service—What results have been attained by requiring applicants for positions in city departments to pass an examination and making their tenure of office dependent on good behavior and mental and physical ability? To what departments should civil service laws apply?

#### TUESDAY, AUGUST 2.

10 A. M.—Addresses and General Discussion:

Boards, Single-Headed Commissions or Council Committees—Should the administrative affairs of the departments of public works, water, fire, police, parks, charities and correction be conducted by boards, single-headed commissions or council committees?

2 P. M.—Addresses and General Discussion:

Regulation of Saloons—What policy is best to use in enforcing the laws pertaining to saloons?

4 P. M.—Entertainment.

Evening—Entertainment.

#### WEDNESDAY, AUGUST 3.

10 A. M.—Addresses and General Discussion:

Remuneration to Cities for Franchise Rights In, Over and Under Public Streets and Alleys—What remuneration, if any, should be exacted from light, water, street railway, telephone and sub-way corporations and how should it be collected?

Afternoon—Entertainment.

8 P. M.—Addresses and General Discussion:

Municipal Ownership of Public Service Industries—What progress has been made in this line in the United States and Canada and with what results? What should be its limitations?

#### THURSDAY, AUGUST 4.

10 A. M.—Addresses and General Discussion:

Public Water Supplies—What means should a municipality employ to supply its people with an ample supply of pure water at equitable rates? Is the general use of meters desirable? What systems of filtration are satisfactory?

2 P. M.—Election of Officers.

Election of Next Meeting Place.

Evening—Entertainment.

It will be noted that Tuesday evening, Wednesday afternoon and Thursday evening are left open for entertainment features, which will be provided by the local committee at Detroit. It is very likely that Monday and Tuesday afternoons, after 4 o'clock, will also be given over to enjoyment, as the Detroit people are making great plans for giving their visitors a thoroughly good time.

## PUBLIC LIGHTING.

—Glens Falls, N. Y., has just made a three-year contract for ninety or more 2,000 candle power arc lamps at 24 cents per lamp per night.

—Oshkosh, Wis., streets are lighted entirely by gas. Under a five-year contract, the city pays \$68 per lamp, per year, for 466 lamps, burning on the moonlight schedule.

—Mayor Baum, of Saginaw, Mich., in his annual message, recommends that the city purchase the West Side Gas Company's plant, whose thirty-year franchise has expired. In order to make the purchase an enabling act is necessary, and the proposition must be submitted to a vote of the people.

—The commercial electric lighting plant owned by the city of Anderson, Ind., has earned 20 per cent. on the \$48,000 investment during its first year of municipal operation. Aside from this advantage to the city, there has been an individual advantage to every person using the lights, as the service has been greatly improved.

—Edward J. Wehrley, superintendent of the municipal electric light plant at Newark, O., has made a report showing that the total operating expenses, including repairs and supplies, for the year ending April 1, 1898, amounted to \$7,370.53. After allowing interest on bonds, amounting to \$1,854.19, the superintendent states that the cost per arc lamp per year was \$40.83.

—At Woodbury, N. J., the majority of the finance committee of the council reported in favor of letting a contract for electric street lighting at \$80 per arc lamp per year. Councilman Clymer contended that the price should be not more than \$75, and, in the heat of argument, stated that if the council would give him the right he would have a plant in operation within three months which would furnish electric arc lamps at \$65 per year.

—In his message to the council, Mayor J. A. Johnson, of Fargo, N. D., compared the cost of electric lighting in his city with that of the city of Fremont, Neb., where they have a municipal plant, with a capacity of 100 2,000 candle arc lights and 1,800 16-candle power incandescent lights, which was erected in 1895 at a cost of \$25,000. The cost of operating the arc lights all night for 1897 was \$41 per lamp of 2,000-candle power per year, not including interest or depreciation. Fremont is situated, like Fargo, where fuel and other expenses are about the same in the use of steam power. The mayor thought if it did not cost more than \$41 per light for a year in Fremont, it should not cost more in Fargo. He also cited the plant and cost of operating the same, owned by the city of Grafton, N. D., showing a great difference in favor of the plant owned and operated by the city of Grafton.

—A contract forty-two years old is cited by the St. Paul Gas Company in a suit brought by the company against the city of St. Paul. The complaint recites that the gas company was organized by an act of the territorial legislature March 1, 1856. Section 9 of that contract provided that the city should pay the company 8 per cent. per annum on the cost of all street lamps provided for supplying the city with street illumination, as well as on all lamp posts, gas meters, pipes and labor furnished in connection with said lamps. Up to January 1, 1897, says the company, it erected 3,362 lamp posts, with appurtenances. Thereafter the city ceased to use 717 of the lamps. About May, 1897, forty-five additional and different posts and lamps were provided for the city. The company has continued to demand, four times a year, in accordance with the ancient contract, interest at the rate of 8 per cent. on the cost of the 3,362 original lamps and posts and the cost of the forty-five additional lamps and posts, although the city has ceased to

use about seven hundred of these lamps. The city has paid the interest, as requested, which covers, presumably, the interest on the cost of the abandoned lamps, except the sum of \$1,426.46. That sum the company now sues for.

—J. R. Cravath, in the *Chicago Record*, makes some useful suggestions to owners of electric-light plants in towns of 2,000 to 5,000 inhabitants. Towns of this size usually have an electric-light plant, a water works system, a small factory or two and a dozen or more small steam plants of from 1 to 20 horse power. Mr. Cravath maintains that there is ordinarily no good reason why the electric-light company cannot supply power to these varied industries more cheaply and more satisfactorily than under the present system of every man for himself. In other words, the power generation for the community should be consolidated under the roof of the electric-light plant, and the men and boilers and engines there employed made to earn money twenty-four hours a day, instead of two or three. Mr. Cravath takes as an example a town with a population of 4,500 in the heart of a farming district in one of the Central States. It may have a small factory or two, some machine and blacksmith shops, elevators, flour mill and printing offices that require power, possibly, in the aggregate, 100 horse-power, run by small steam engines. The electric-light plant, if the service is good, the manager energetic and the people fairly thrifty, will have a load of 40 arc lamps and 120 horse-power in incandescents. Like every other plant of the kind, it earns money three or four hours a day and loses the rest of the time. A few blocks from the electric-light plant is the water works, probably owned and operated by the city and not unlikely drawing its supply from a deep well by steam pumps. The electric-light plant can do all this work in connection with a power circuit at a fair profit and a reduced cost to the town or water company. As Mr. Cravath puts it: "In a great many places where electric-lighting companies are doing nothing but lighting, and that at a very small profit, it is possible, by combining a power circuit with water works pumping contracts to secure a power load that will considerably increase the earning power of the plant by putting to work machinery and men now employed at a disadvantage because of the few hours a day they are occupied on paying load. There are some places where local conditions will not permit this, but there are many where they will."

## FIRE DEPARTMENT NOTES.

—The expense of maintaining the Dubuque, Ia., fire department for the year ended March 1, 1898, according to Chief Reinfried's report, was \$30,779.26. The force consists of two engine companies of eight men each, one hook and ladder and chemical company of twelve men, one chemical company of four men and one hose company of four men.

—Fire Marshal Carl Moeller, of Peoria, Ill., has published his annual report, which shows that there were 277 fires during the year, with total losses of \$433,690, and insurance of \$1,170,855. The expenditure of the department amounted to \$51,235. The uniformed force consists of the marshal, \$1,400 a year; one assistant marshal, \$1,100; eleven captains, \$840 each; twenty-five pipemen and truckmen, \$780 each, and eleven drivers, \$780 each.

—The annual report of William H. Moore, chief engineer of the fire department of Youngstown, Ohio, shows: Total alarms, 173; total losses, \$122,485; insurance paid, \$111,735; chemical engines extinguished 58 per cent. of the fires. The force consists of the chief, an assistant chief, six captains and twenty firemen. The

chief recommends the placing of all fire alarm wires in the business district underground.

—The charity ball given by the fire department of Atlanta, Ga., on April 11, for the benefit of the Firemen's Benevolent Association, was not only a big financial success, but a brilliant society event. A pleasant feature was the presentation of a flag by the officers to the members of the department. The flag is of red silk, trimmed with gold braid and appropriately embroidered in gold. It was made by Mrs. W. R. Joyner, her sister, Miss Adele Setze, and Chief Joyner's sisters; Mrs. J. W. Neal and Mrs. M. S. Oliver.

—According to the annual report of Chief Engineer Arnold, the Salem, Mass., fire department consists of three engine companies of seventeen men each, two ladder companies of sixteen men each, two hose companies of eight men each, a driver and engineman for the chemical, a driver for the supply wagon, a driver for the chief's team, a relief driver, a chief and two assistant engineers, making 107 men, sixteen of whom are permanent. There were ninety-eight alarms during the year, and the losses amounted to \$81,867, with insurance of \$388,875. The expense of the department amounted to \$30,307.78.

#### WATER DEPARTMENT NEWS.

—The council of Mineral Point, Wis., has let the contract for building the water works system of that city to Crellin & Lovell, of Des Moines, Ia.

—At Kansas City, Mo., one mill for the water fund has been included in the general tax levy. With this tax added to the income of the water department, it will be possible to reduce the rates.

—A resolution has been adopted by the council at Fort Scott, Kan., providing that the city take immediate steps toward the acquirement of its own water plant. There is dissatisfaction with the quantity and quality of the supply furnished by the Fort Scott Water Company.

—The board of city affairs of Cincinnati has abolished a number of positions in the water department for the purpose of reducing expenses. It is claimed that a saving of about \$15,000 a year has been effected in this way without impairing the efficiency of the service. Among the positions abolished are those of Comptroller Daniel W. Brown and Assessor Adolph Pleumer.

#### POUGHKEEPSIE FIRE HOSE CASE.

An interesting trial, in which some light was thrown upon the peculiar methods of a certain fire hose agent, has just been concluded at Poughkeepsie, N. Y. Some weeks ago the city of Poughkeepsie, after receiving bids, purchased a quantity of hose from the Fabric and Gutta Percha companies. The Eureka Company was among the disappointed bidders, and its agent, Walter Ide, became so enraged over his failure to secure the contract that he accused Aldermen John T. Bayer and Louis Kirschner of having solicited him for a bribe. Upon this charge the two aldermen were indicted, and their trial, which was a thorough one, has just ended with a verdict of acquittal. At the trial the prosecution was unable to substantiate the charges made by Ide, and, on the other hand, the defense set up a case that made Ide's position in the matter anything but comfortable.

When Aldermen Bayer and Kirschner were first confronted with the charges of Ide, Mr. Bayer promptly accused Ide of having offered him 20 per cent. commission in case the contract was let to the Eureka Company. Ide was arrested on this charge and will probably be prosecuted. Furthermore, Aldermen Bayer and Kirschner

threaten to bring a civil suit against the Eureka Company for damages, on account of the persecution they have suffered through the unfounded charges of Agent Ide.

#### A PROGRESSIVE MUNICIPALITY.

The Common Council Manual of the city of Buffalo for this year, which has just been issued by City Clerk Frank W. Gethoefter, is the most complete book of its kind to reach this office. Aside from a full list of city officials, the



CONRAD DIEHL,  
Mayor of Buffalo.

salary roll, the rules of the council, the license schedule and other matters usually given in books of this kind, the Buffalo manual contains excellent articles on the business, social and political institutions of the city and many handsome illustrations, some of which are here reproduced. From the descriptive matter in the book we take the following:

"The city works under a revised charter, which became



FRANK W. GETHOEFER,  
City Clerk of Buffalo.

a law in 1892. It was framed by a committee of citizens representing the best of Buffalo's business, social and political life. This model instrument provides for a board of aldermen, comprised of twenty-five representa-

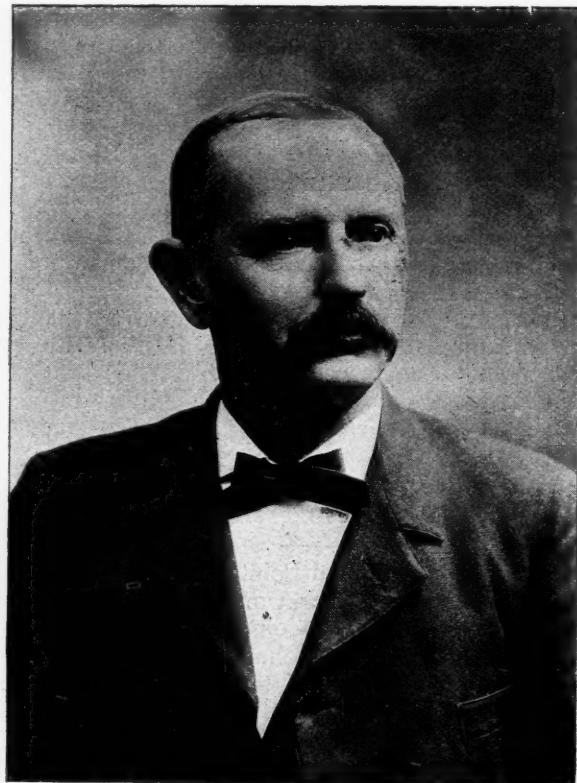
tives, one from each of the twenty-five wards (as the city grows and adds wards to its population, each will be entitled to a representative to take his place in the board). This body originates all legislation in the city government. All action taken thereby is inoperative unless approved by the board of councilmen, made up of nine

framed by the constitutional convention of 1894, did away with the admixture of state, national and local politics, by so amending the charter of the city that municipal officers must be chosen at separate elections, and providing for a two-year term of service of aldermen, after the inauguration of the new system so framed should



JAMES N. ADAM,  
President of the Common Council, Buffalo.

men elected on a general ticket. This body does not originate legislation, but is distinctively a board of review, and above and beyond it stands the chief executive, the mayor. Matters passing both boards and reaching



HENRY ZIPP,  
President of the Board of Councilmen, Buffalo.

have been completed. Under this it became necessary in 1894 to elect all aldermen for three-year terms, and an entirely new board was elected in 1897, taking office on January 1, 1898, to serve two years each.

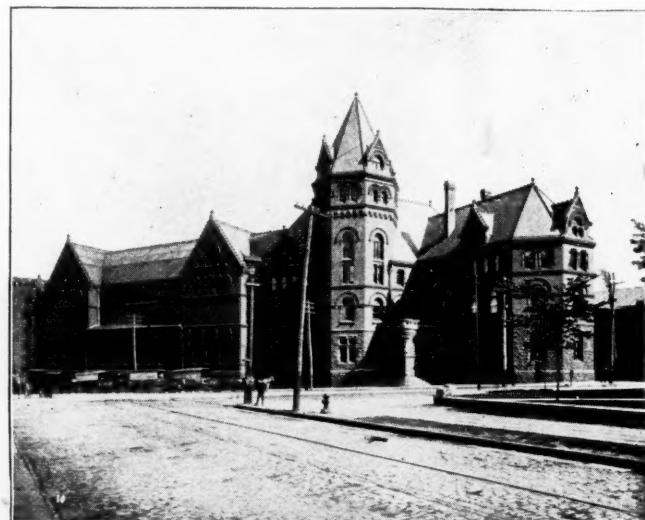
"At the annual election held in odd-numbered years thereafter 'it is provided there shall be elected alternately



CITY AND COUNTY HALL, BUFFALO.

him may be defeated at his hands by the interposition of a veto. This, however, may be overridden by a separate vote of both boards.

"The new constitution of the State of New York,



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five and four councilmen for the term of four years,' and the terms of other city officers also expire with the end of the odd-numbered years, successors to be elected the preceding fall.

"And thus the machinery of the new constitution has been perfected and set in motion so that all city offices to become vacant will be filled by election in odd-numbered years, no municipal election occurring hereafter at the same time as elections for state or other offices.

"Buffalo has a most efficient system of public instruction. It has sixty-two public schools, which include two high schools, one on the east, the other on the west side of the city, with a total enrollment for the year 1897 of 53,002 pupils, an indication that the public schools are growing in favor and have the confidence of the community. The number of children attending all other schools is 18,319, making a total school registration of 71,321. The attendance at the Buffalo High School has increased from 300 pupils in 1883 to 2,300 in 1897.

"For the school year of 1897-98 Supt. Emerson has included in his broad plan of education a new and beneficial feature, designed especially for parents. This part of the work of the department of public instruction is the course of free popular lectures given on Wednesday and Saturday evenings during the winter months at some of the high and district schools of the city. The



JOHN J. KENNEDY,  
President of the Board of Aldermen, Buffalo.

subjects include travel, history, literature, science and other topics of general interest.

"Buffalo has taken her place among the most progressive cities in securing the passage of an act creating a teachers' retirement fund for those who are worn out in the service. The Women Teachers' Association took active part in urging the passage of this bill, and the fact that 900 teachers voted for it undoubtedly helped to push it through. Teachers give one per cent. of their salaries in support of this fund.

"The water department is a branch of the municipal government, entirely self-supporting and earning every year more than its expenditures on mains, etc., which it is constantly building, and reserving the rest for the extending of water facilities in the future. Thousands upon thousands of dollars are expended by this department yearly in laying mains through the constantly increasing list of new streets.

"Buffalo has the best police and fire departments in the United States. There are 711 men in all in the police employ, and 480 constitute the total number of employes in the fire department. Both departments are governed by boards of commissioners of three; of the former the mayor being, ex-officio, a member.

## PUBLIC PLAYGROUNDS AS AN EDUCATIONAL AND CIVIC NECESSITY.

BY STOYAN VASIL TSANOFF.

Chairman of the Co-Operative Committee on Playgrounds,  
New York.

Simple though the playground idea appears in some respects to be, it holds the real source of many influences which have been partially or ineffectively exerted through other channels, both formative and reformatory. The playground, therefore, becomes of great importance not only to the individual, but to the State and community. In using the word playground we do not mean what is generally understood by the term. Playgrounds are not parks nor are they mere breathing spaces in congested sections of the cities. Neither are they to be considered as open spots in parks or elsewhere, where the young may go at will to "chase ball" or "romp around." Such conceptions of the term, though general, are too limited to accomplish the end sought. Nor must the playground be confused with the gymnasium or the athletic field. The distinction between these and the playground is very similar to that between schools and libraries.

By playgrounds, in a model or scientifically educational sense, we mean open spaces of suitable dimensions, equipped with playground teachers and all other necessities for attracting, invigorating and guiding the young of the community in their open air enjoyments and spontaneous growth, all the year round, thus serving as a connecting link between the home, the school and the church, and extending the good influence of these institutions over the outside walks of a child's life. In other words, playgrounds are institutions that educate through play, while the child is in free activity, through the natural gratification and training of the sensibilities by cultivating pure tastes in amusements and enjoyments, and above all by forming habits of conduct that crystallize into character, just as the school drills the thinking faculties and familiarizes the mind with the surrounding world.

A movement for the definite educational recognition of the playground was started in the city of Philadelphia five years ago, and although still in its infancy, it has sufficiently advanced to be quoted as an illustration. While there have been numerous playgrounds provided for use during the summer months, only one model playground has been equipped for use the year round. This, it is hoped, will serve as a mighty object lesson in the development of this neglected branch of child education.

A space of about three acres was procured for this playground from the city of Philadelphia, together with an appropriation of \$12,000 for its equipment. About \$7,000 were also raised by private subscription. In the center of the ground a circular area was portioned off. This is to be flooded during the skating season and used as a playground during the rest of the year. A bicycle track, fenced for safety, surrounds this circle. In the outside remaining portion of the grounds are found various provisions for the children's enjoyment, such as tennis courts, swings, parallel bars, swinging rings, sand piles, etc.; also a music stand, sanitary accommodations, and drinking fountains. A promenade path surrounds the entire playground. Here mothers may wheel their babies or rest upon the seats provided for visitors under the overhanging shade-trees. On opposite sides of the playground are two pavilions, one for boys, the other for girls. These were intended to supply the place of the playground in bad or wintry weather, but they have been

found rather small and not well fitted for the purpose and much better structures could be designed.

It is the plan of those in charge to introduce, under the direction of the playground teachers, various games, both national and foreign; to revive old ones and invent new ones, and in all things to manage the grounds to suit the playful tastes of the children and serve to their best development. The playground teachers, having supervision, are not to restrict the liberty of the children. The teacher's duty is simply to direct and guide them in their free enjoyments, teaching them to be considerate toward one another, to respect each other's rights, and to "play fair." In addition to the hired directors, volunteers from the neighborhood are gladly welcomed to assist the teachers, and share in the children's play. The playground thus becomes a center of social intercourse and culture as well as a spot of delight in the neighborhood.

The maintenance of the grounds and buildings and the hiring of the janitors is to be assumed by the city, but the educational phase and the responsibility of keeping out bad influences and preserving the purity of the moral and social atmosphere of the playground it is proposed to place in the hands of a neighborhood organization composed of representatives from the best moral and social agencies in the community. In time it is hoped that such educational districts will extend over the whole of Philadelphia and be confederated under one general supervising management.

It is at play that the child learns almost invariably its first lessons in evil. It is in idle hours that the boy contracts habits of vice and evil associations and tendency even younger than is often imagined. Yet play the child must and will. Why not make this the opportunity for the greatest possible good by laying hold upon the child and sowing in its joyous moments delight in virtue and not in vice? The busy mother cannot go with her children into their play, nor can the father or the teacher, and so the child is left largely to its own devices and a prey for vicious playmates. In the city, again, children are persecuted for playing on the streets, and learn quickly to defy the law. It is no dream, no fancy to declare that the playground would add much to the civil order and regularity of a community, as well as advance to a great degree the harmonious physical development of the children.

But it is in the realm of the psychical nature that the greatest service is to be rendered. Play to the child is but the breathing of his soul; it is the child instinct. Next to hereditary disposition and gifts, it is through play that the child develops that life, energy, and quickening of the spirit which scatter dulness, stupidity and melancholy in the subsequent man. "A child," says Froebel, "that plays thoroughly with self-active determination, persevering until physical fatigue forbids, will surely be a thoroughly determined man."

Not only do the playgrounds develop and strengthen life, but they also sweeten it by making the child happy. "The first duty toward the child," says an eminent writer, "is to make him happy; no other good can he receive in the world that can make up for this." And in his happiest moments the personal and social habits of a child may be formed that will crystalize into character—the supreme end of life.

As we have already shown, much of the evil that pervades in life comes from disregarding the child at his play. We either suppress or smother the play instinct, or drive the children to the streets and alleys, or to rowdy lots to amuse themselves in manners that blight their moral nature and form corrupt and vicious tendencies. From the gleeful children's gangs or the streets come the lazy loafers who hang around corners and low resorts;

from them come also the idlers, who at night fill the station houses. The tramp and those who create a demand for police courts and prisons are largely street graduates and recruits from the boy's gangs. While from depriving the early life of its normal development follow the nervousness, weakness, and mental, moral and physical infirmities that have invaded the masses of people, often rich as well as poor. By leading the children from home to school and from school into the playground with all its wholesome and elevating advantages, we go at once to the bottom of many evils.

There is no doubt that the difficulties of procuring spaces for playgrounds in large cities are great, but no more so than for parks, public schools, etc. It is possible wherever their need becomes appreciated. The Culture Extension League, of Philadelphia, was started early in 1892. The society's first efforts were directed toward rousing public interest in the need of public playgrounds by means of pamphlets, public meetings, circulars and the press. In 1894 the Board of Education of that city was appealed to, to open some available school-yards for the summer months, and some charitably disposed people opened on a small scale two playgrounds, which were successfully conducted.

By the spring of 1895, however, the board of education and other officials became thoroughly aroused to the importance of the movement, and the board through its committee on property opened four school yards during that summer "as an experiment." The city council rather reluctantly granting \$1,000 for their maintenance.

These playgrounds were equipped with sand piles, supplied with buckets and shovels, with swings, shade tents, jumping ropes, soft balls and various other little toys. Two caretakers were also employed, a man and a woman for each ground; the former having police power to be exercised over mischievous boys. Volunteers, often from the most fashionable circles of Philadelphia, frequently visited the playgrounds and joined the children in their various games, singing and reading, and telling them stories.

The civilizing and healthful effect upon the children, the comfort thus afforded working parents, the increased peacefulness in the neighborhoods, and the gratitude of the children were so evident to those interested in "the experiment" of 1895, that the board of education opened in 1896 twelve school yards, and in 1897 twenty-three; the city council willingly raising the appropriation for maintenance to \$3,000, and the indications point towards proportionate growth in the future.

Encouraged by the action of the board of education the Culture Extension League next turned its attention towards the utilization of other available opportunities. As a result, the interest in playgrounds is very widely spread in Philadelphia. There are now a number of organizations promoting these benefactions, and last year, in addition to the twenty-three school yards opened, six vacant lots were utilized as playgrounds, maintained by confederated churches in the neighborhood or by charitable persons. These are good beginnings in the right direction, though the crowning achievement is, beyond question, the model playground already described.

In New York where the agitation for playgrounds has been going on for over ten years, and where Miss Grace Dodge has for two years been caring for one playground at her own expense, we are especially hopeful of having a number of successful playgrounds opened this summer. Such is the case also in Brooklyn, where last year a playground was established in one of the city parks.

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—A. R. Kiefer, a former representative in congress, has been elected mayor of St. Paul.

## CITY CLERK OF TOLEDO.

Here is a good likeness of Lem P. Harris, the popular city clerk of Toledo, O. He was born in July, 1859, educated in the common schools and served an apprenticeship as printers' "devil." He has worked his way up through the different grades of newspaper work, serving as printer and journalist until his election to the office of city clerk in 1894, which position he has filled creditably. He went to Toledo in 1886, and after a connection with the Toledo *Commercial* and other printing and newspaper concerns, he formed a partnership with J. D. Batch, under the firm name of Batch & Harris,



LEM P. HARRIS.

which lasted until 1893, when they were burned out. In 1893 Mr. Harris was elected alderman from the Sixth ward, which was then all of East Toledo. After serving half his term he resigned and accepted the office which he now holds. In 1894 he was appointed delegate-at-large from Toledo to the state convention at Columbus and made a member of the state committee from the Ninth district. Mr. Harris is an enthusiastic worker in the Republican ranks. When he was first elected city clerk he was a member of the Typographical Union, and his election was the first recognition of labor unions in the city offices. He is a member of the Lincoln Club and also belongs to the Masonic fraternity, the Knights of Pythias, Order of Maccabees, National Union and Knights of the Ancient Essenic Order.

—Orders have been placed with the American Fire Engine Company by the city of Buffalo, N. Y., for rebuilding a La France engine, and by the city of Stockton, Cal., for rebuilding an Amoskeag engine; both steamers are to be supplied with the Fox sectional water tube boiler. The American Company is rebuilding engines for the following volunteer companies: Water Witch, No. 5, of Wilmington, Del.; United States, No. 1, of Atlantic City, N. J., and Liberty, No. 5, of Reading, Pa., and an engine is being built also for the village of Wilmington, O.

## CARE AND MAINTENANCE OF SEWERS.

In another column will be found an article on the maintenance and care of sewers in New York city. This forms the beginning of a series of articles on the methods in vogue throughout the United States in caring for this important phase of sewerage. It is well known that all the excellence of the design or construction of a system of sewerage is often rendered nugatory by neglect to inspect and clean the sewers at stated intervals. It will doubtless surprise many to learn that in New York city less than 20 per cent. of the sewers are annually inspected, but in this particular New York does not differ from many other cities. It would seem that the expense of examining each sewer at least once a year would be small compared with the increased cleanliness of the sewers and the consequent increased healthfulness of the people.

## PAVING IN SYRACUSE.

In Syracuse the average cost of nineteen brick paving contracts awarded since 1892 is \$1.99 per square yard, with 26 cents per cubic yard extra for excavation. It is significant that although Syracuse is the home of a large paving brick works, only two small contracts have been let for brick since 1895, while many miles of asphalt pavement have been contracted for in the same period. The last contract on which brick was admitted in the competition was Irving avenue, March 21, 1898. The lowest brick bid was \$1.85 per square yard, with 35 cents per cubic yard extra for excavation. Although the lowest bid for asphalt was slightly higher than brick the contract was awarded for asphalt on petition of the property owners.

## CONVENTION OF POLICE CHIEFS.

The fifth annual convention of the National Association of Chiefs of Police of the United States and Canada convened in the clubroom of Hotel Pfister, Milwaukee, Wis., May 10. There were more than fifty members present at the first call to order, representing cities from Boston to Los Angeles, and from Duluth to Mobile. Mayor David S. Rose welcomed the chiefs in a pleasing address.

President J. T. Janssen created a mild sensation in his annual address when he asserted that transportation to some land set aside for penal purposes would be preferable to the present prison system. He bore down upon the present extradition laws, and pronounced them obsolete. He showed that crime and criminals have been increasing at a rate far outstripping the growth in population. His arraignment of present methods in the treatment of convicts in prisons was especially strong, and was greeted with applause.

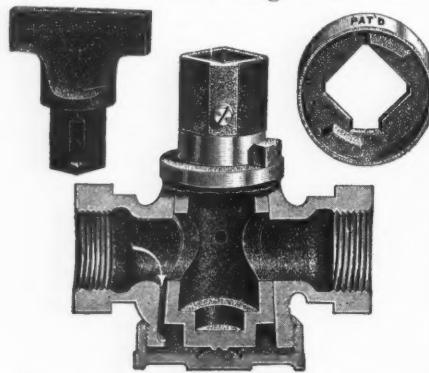
The former officers were re-elected for the ensuing year. They are: President, J. T. Janssen, Milwaukee; vice-president, W. G. Moore, Washington, D. C.; secretary and treasurer, Harvey O. Carr, Grand Rapids, Mich. Chattanooga, Tenn., was selected for the next meeting place.

Among those present at the opening meeting of the convention were: Philip Deitsch, Cincinnati, Ohio; Joseph Kipley, Chicago; Captain Colleran, Chicago; Reuben R. Zaker, Providence, R. I.; W. G. Baldwin, Roanoke, Va.; F. J. Cassada, Elmira, N. Y.; George E. Corner, Cleveland, Ohio; Harvey O. Carr, Grand Rapids, Mich.; H. F. Demmer, Aurora, Ill.; John F. Dolan, Wilmington, Del.; Benjamin P. Eldridge, Boston, Mass.; J. M. Glass, Los Angeles, Cal.; F. W. Hill, Chattanooga, Tenn.; Henry Hopper, Newark, N. J.; B. F.

Howard, Richmond, Va.; Charles A. Hyland, Terre Haute, Ind.; J. T. Janssen, Milwaukee; Matthew Kiely, St. Louis, Mo.; R. J. Linden, Philadelphia, Pa.; John Martin, Detroit, Mich.; William G. Moore, Washington, D. C.; Henry Muth, Allegheny, Pa.; Frank McDermott, Savannah, Ga.; T. C. McDonald, Birmingham, Ala.; W. W. McDowell, Youngstown, Ohio; Charles McMaster, Auburn, N. Y.; Roger O'Mara, Pittsburgh, Pa.; William A. Pinkerton, Chicago, Ill.; Frank Pritchett, Evansville, Ind.; Wiley Williams, Columbus, Ga.; Sam Woods, Erie, Pa.; P. Kain, Saginaw, Mich.; Benjamin Raitz, Toledo, Ohio; M. J. Donovan, Deadwood, S. D.; James F. Quigley, Indianapolis, Ind.; William H. Owen, Paris, Ill.; Herman C. Hauss, East St. Louis; G. M. Timlin, Oil City, Pa.; S. M. Hannah, Danville, Ill.; J. W. Gathright, Colorado Springs, Colo.; W. S. Seavey, general traveling agent, Denver Detective Agency; W. H. Crompton, Superior, Wis.; William H. Pierce, Boston, Mass.; Richard W. Schroeder, Bloomington, Ill.; P. J. Pierce, Manitowoc, Wis.; J. F. Farley, Denver, Colo.; W. J. Bartram, Evanston, Ill.; F. G. Graul, Paterson, N. Y.; John W. Perkins, Detroit; Ivan Mansen, Duluth; Charles W. Soost, Mobile, Ala.; P. Kelly, Columbus, Ohio; G. Kennedy, Fort Madison, Iowa; James Faust, Altoona, Ga.; S. T. Hamilton, Baltimore; F. W. Hoefer, Appleton; Joseph Kozlosky, Cedar Rapids, Iowa; George M. Porteous, Chicago; G. A. Harrison, Lafayette, Ind.

#### INVERTED KEY CURB COCK.

All water works men understand the necessity of having the best grade of goods for underground work, and new ideas in this line are hailed with pleasure. The H. Mueller Manufacturing Co., of Decatur, Ill., manufacture



the H. M. inverted key curb cock, here illustrated, and they claim many important features in the nature of improvements over the old-style curb cocks. In this cock the large end of the plug is at the bottom, or just the opposite from the ordinary curb cock, hence the name "inverted key." There is no possible chance for a cock of this nature to stick and cause trouble, as a key or rod, when placed on the cock, by its weight tends to loosen the key should it be the least bit tight, and permits of easy operation. There is no possibility of leakage, no matter what the pressure may be, as the water enters the by-pass and flows under the key, thus forcing it gently upward to its bearing. These cocks are fitted with H. M. patent cap, which fits snug over the square on key and prevents any dirt, grit or sand from working its way around the key and thus causing leakage. Not only do they claim that this keeps foreign matter from interfering with the proper working of the key, but that the two inside lugs, with lug on body of the cock, forms a strong check, and the operator always knows when the cock is full, open or fully closed. It can be operated with T handle or square rod, and is made in many different styles, including the Minneapolis and lead flange patterns. The goods are constructed of special composition of red brass, tested under 200 pounds pressure, and guaranteed not to leak or become set.

#### ELECTRICAL EXHIBITION OPENED.

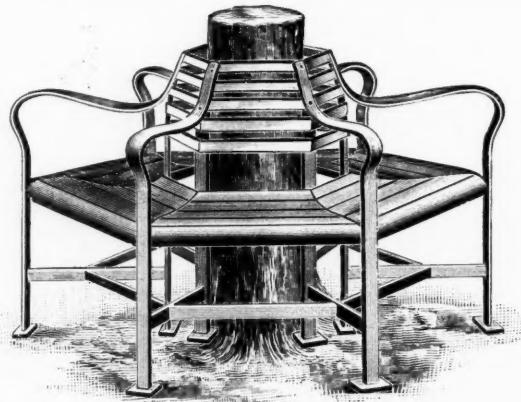
The Electrical Exhibition at Madison Square Garden, New York, was auspiciously opened on Monday evening, May 2. Chauncey M. Depew delivered the opening oration, after having read the following telegram from President McKinley, which was received over a telegraph line connecting the White House directly with the speakers' gallery in the garden:

"It gives me great pleasure to open the Electrical Exhibition in Greater New York, and to participate in this wonderful demonstration of the latest method of recording and publishing by means of electricity. I congratulate you upon the achievements of American genius. I am glad to know that the resources of the wonderful electrical arts have already been so far advanced in the United States that American electrical goods are welcome the world over." **WILLIAM MCKINLEY.**"

Mr. Depew also read a telephone message from Vice-President Hobart. The attendance on the opening night was about 8,000. The exhibits are greater in number and more interesting and instructive than even the wonderful shows made at former exhibitions.

#### PARK SETTEES AND BENCHES.

The accompanying illustration shows a style of settee which has been very much in demand during the past five years. It is suitable for either public grounds or private parks, and is considered an improvement over the rustic wooden bench, as it is more comfortable, free



from dampness, and offers less asylum to ants and other insects. A very pleasing effect is produced by having the slats of selected oak, well finished and polished in oil. Iron slats or cast-iron tiles are sometimes used for the seat. The frame is wrought iron. Settees of this sort are made by the Bethlehem Foundry and Machine Co., of South Bethlehem, Pa. This concern is one of the largest manufacturers of outdoor benches in the country. The various styles made at its works have been carefully designed to meet the requirements of public parks and similar resorts, and are the outcome of long experience and numerous practical tests. It has furnished thousands of settees to New York, Philadelphia and other large cities. Any purchasing agent or official about to be in the market for outdoor benches or settees should write for a catalogue.

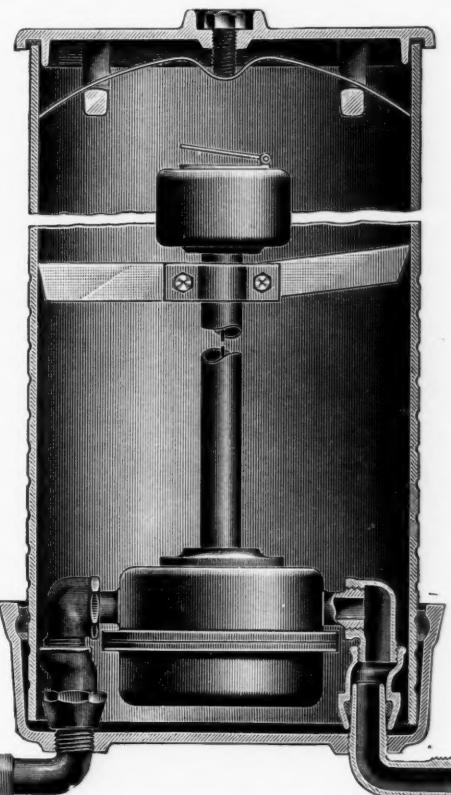
#### THE HOPPES METER BOX.

The Hoppes meter box is a comparatively new invention and one that enables water works officials to meet the difficulties attending the setting and care of meters. As shown in the accompanying cut, this box consists of

a plain cylindrical shell, with a bottom and a lid or cover. The bottom is water-tight, being leaded on, and the cover has a joint made with asbestos rope placed in a groove, which makes it also water-tight. The cover is locked on by a five-cornered cap screw, which compresses a bow-shaped spring, the ends of which press against the sides of box. The box is usually located in sidewalk near the curb and just outside the stop valve. To set the box, the pipe is cut and the ends attached to the ells which are screwed in the bottom of the box. The box is then adjusted, by means of the telescopic arrangement of the bottom, to the proper height, and the bottom leaded on in the usual manner of making a pipe joint. Should the body of the box be too long it may readily be cut off at one of the annular rings.

The ells to which the service pipe is attached are provided with plain taper nipples, which project upward inside of the box, and the meter is furnished with fittings, as shown in the cut, having sockets at their lower ends which fit over the nipples. The sockets have pure rubber packing rings placed in grooves in their bottom ends, and when these are slipped down over the nipples, make water-tight joint, and form the inlet and outlet connections to the meter. Owing to the peculiar form of the groove, the joint formed by the rubber ring holds firmly and the meter cannot be forced off the nipples by any ordinary pressure, but to make doubly sure and to hold the dial box concentrate, a cross bar is attached to the extension which prevents the meter raising. The cross bar is slightly longer than the diameter of the box, and one end is hinged near the center so as to form a toggle movement that forces the beveled ends of the bar against the sides of the box should an attempt be made to raise the meter without first lifting the loose end. The only thing required to connect or disconnect a meter after the

box is set and the fittings adjusted, is to push it down on the nipples or pull it off as desired. To pull the meter out of the box, take hold of the cross bar. The Hoppes



meter box is manufactured by the Trump Mfg. Co., Springfield, O.

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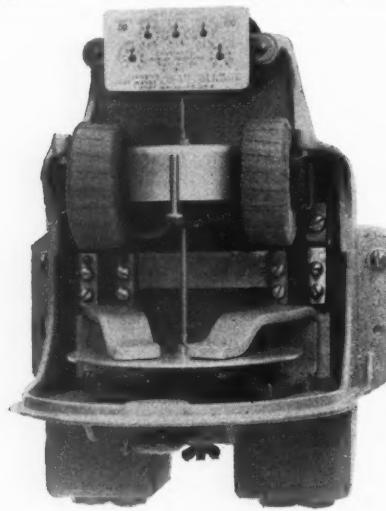
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**DUNCAN INTEGRATING WATT METER.**

This instrument embodies all the essential points that go to make it perfect in every respect. Its operation, like the lamp and ampere hour meters made by the Fort Wayne Electric Corporation and which are giving such good satisfaction, depends upon the induction principle,

so that it is very simply constructed, and entirely free from any commutator, brushes or other rubbing contacts. It is also the lightest and most compact induction watt meter on the market, so that it is very easily handled and installed. It also has an accuracy on all loads that is excelled by none. When once standardized it will remain accurate for years, this being due to the permanent magnets forming part of the retard-

ing device being artificially aged by a new process. Another feature that readily recommends it, is a variable friction compensator with which it is equipped. This is something entirely new and provides for cases where the meter should run slow on one lamp after being installed some time, due to the jewel becoming rough. This is a complaint so familiar to the users of electric meters that it does not require to be dwelt upon here. Suffice it to say, however, it does the work and does it well, and without interfering or modifying the speed on any of the other loads. This meter is also applicable to systems having a

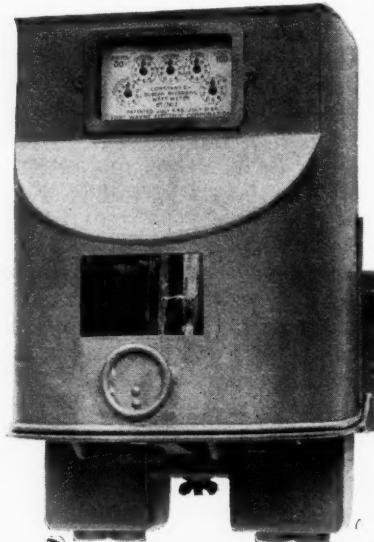


varying rate of alternations due to uneven speed of the motive power, registering with extreme accuracy.

The principal elements employed in its construction are: series coils that are mounted upon a laminated iron core which forms the greater portion of the magnetic circuit;

an aluminum closed conductor or armature in the form of an inverted cup; and a shunt or volt coil mounted inside the said aluminum armature. The series coils are traversed by the main currents supplying the lamps or other translating devices, and magnetize the iron core in proportion to the amount of current through them. The volt coil is traversed by a current proportional to the electromotive force of the circuit, and is

caused to lag behind the pressure by the addition of an impedance coil connected in series with it. This lagging or difference of phase between the magnetisms of the series and shunt coils causes them to combine into a common resultant which rotates the aluminum armature with a torque proportional to the watts. To make the speed correct and reliable, an aluminum disc is mounted upon the spindle with the armature and rotated between the poles of permanent magnets, the resulting action of which gives a speed exactly proportional to the watts or energy passing through the meter. The meter is made by the Fort Wayne Electric Corporation.



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## GAS STREET LIGHTING STATISTICS.

The following statistics, prepared by the League of American Municipalities, show contract prices paid for gas street lights in twenty-six cities:

Place.	Price per lamp per year.	Life of contract.	Candle-power.	Schedule.	Posts and lamps owned by	No. of Gas-lights for sts.	Price of gas per M. to private consumers.
Atlantic City, N. J.	\$22.00	Expired	22	All night	City	137	\$1.50
Baltimore, Md.	1.25 per M.	No contract		All night	City	5,151	1.25
Buffalo, N. Y.	14.67	5 years	18	All night	City	5,568	1.00
Bridgeport, Conn.	18.00	1 year	16	All night	City	75	1.25
Carthage, Mo.	30.00	20 years	14	Moonlight	Company	90	1.50
Charleston, S. C.	16.62	1 year	16	Moonlight	Company	56	1.75
Dayton, O.	19.00	Expired	18	All night	City	1,250	1.00
Erie, Pa.	16.00	5 years	18	All night	City	600	1.25
Elmira, N. Y.	1.70 per M.	Indefinite		Moonlight	City	49	2.00
Fort Smith, Ark.	27.50	15 years	14	Moonlight	Company	205	2.50
Grand Rapids, Mich.	29.00	1 year	60	All night	City	30	1.00
La Fayette, Ind.	20.00			All night	City	18	1.25
Louisville, Ky.	17.47			All night	Company	69	1.35
Mt. Vernon, N. Y.	21.50	5 years	18	All night	Company	505	1.50
Maysville, Ky.	25.00	5 years		Moonlight	City and Co.	125	1.50
New Haven, Conn.	22.25	3 years	18	All night	City	743	1.25
Newton, Mass.	16.50	3 years	18	Midnight	City	948	1.35
Niagara Falls, N. Y.	30.00	No contract		All night	City	30	2.00
New Bedford, Mass.	6½c. night	1 year	16	Moonlight	City	480	1.50
Nashville, Tenn.	75 c. per M.	Indefinite	18	Moonlight	City	493	1.60
Providence, R. I.	28.00	3 years	18	All night	City	700	1.10
St. Paul, Minn.	23.00	1 year	18	All night	Company	2,662	1.30
Sioux City, Iowa.	20.00	5 years	20	All night	Company	52	1.30
Vincennes, Ind.	36.00	25 years	14	Moonlight	Company	232	1.80
Waltham, Mass.	19.20		16	Moonlight	City	126	1.62
Washington, D. C.	20.00	1 year	25	All night	City	6,284	1.25

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Hon. H. S. Pingree, Governor, Lansing, Michigan.  
Hon. John MacVicar, Mayor, Des Moines, Iowa.  
Hon. Edward W. Brown, Mayor, Rockford, Ill.  
Hon. W. G. Mellinger, Mayor, Cumberland, Md.

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## POLICE DEPARTMENT ITEMS.

—W. S. Gaddis has been appointed chief of police at Harvard, Neb.

—Peter Clairheasbon has succeeded George Stroh as chief of police at Hamilton, O.

—Mayor Johnson, of Fargo, N. D., has appointed Fred Bowers chief of police and Gabriel Grant captain of police.

—Chief of Police John F. Albrecht, of Reading, Pa., tendered his resignation to Mayor Weidel on May 1, and accepted the management of the Reading Brewing Co. When he retired from office, Mr. Albrecht was presented with a handsome two-carat diamond ring by the police force. Sergt. Etzel has been appointed chief to succeed Mr. Albrecht. The Reading department now consists of a chief, four sergeants, two telegraph operators, two patrol drivers, two turnkeys, one police matron and forty-six patrolmen. The patrol system, under Patrol Supt. Wm. Hoffman, is among the best in the state of Pennsylvania.

—Chief of Police W. W. McDowell, of Youngstown, Ohio, in his annual report, says:

"The department is laboring under the disadvantage of having no direct method of controlling and regulating the 'fakir' and peddlers who, taking advantage of the opportunity offered them, flock to our city and hawk their wares from house to house and on the street corners in every portion of the city. Were these people always honest and pursuing their business legitimately, this department need not feel so much inclined to protest against them, but many crooks, thieves and burglars avail themselves of the freedom of the city and the opportunity af-

furnished to make a house to house canvass, and, under cover of their pretended business, gain access to and information as to the homes and home habits of our unsuspecting citizens, which information they or their confederates can, later on, turn to account in their real business of thievery and burglary. This is one of the real causes of much of the petty thieving, porch stealing, etc., so annoying to the citizen who falls a victim to it. It is not my desire to take from any reputable citizen any means of a livelihood which he now has or may hereafter desire to pursue, but the safety of our citizens and the peace and quiet of the community require that some means be furnished to control and regulate these non-residents who form the real cause of objection. I would recommend the enactment of an ordinance prohibiting all peddling and street selling whatsoever, except upon a license first obtained from the mayor of the city—the mayor to be empowered to grant such license to real residents of the city, pursuing the business legitimately, after the payment of a merely nominal fee, and to grant a license to non-residents and fix the amount of the fee for the same or to withhold it entirely if he so elects."

—A large number of Jersey City policemen, headed by Chief Benjamin Murphy, have offered their services to the government in the conflict against Spain. The Jersey City bluecoats are an able-bodied and well-drilled set of men, and if called into the army service they will undoubtedly give a good account of themselves.

—At the Milwaukee convention of the National Association of Chiefs of Police, the bureau of identification was reported to be in good working order.

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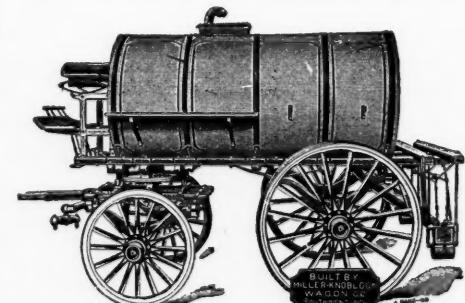
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